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FINAL
STORM WATER DISCHARGE
MANAGEMENT PLAN

IR-01/21, Industrial Landfill, Parcel E
Hunters Point Shipyard, San Francisco, California

June 12, 2003

Prepared for



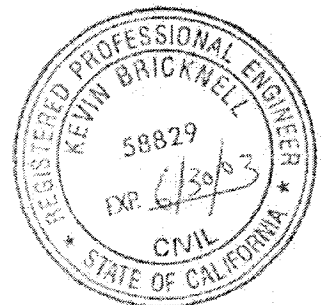
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Dear BCT Members:

Enclosure (1) is provided for your review and records. Thank you for your comments and contributions to this final document. Also, attached to the final document are the final response to comments.

Should you have any concerns with this matter, please contact the undersigned at (619) 532-0913.

Sincerely,

KEITH FORMAN
BRAC Environmental Coordinator
By direction of the Commander

Enclosure (1) Final Storm Water Discharge Management Plan, Installation
Restoration Site 01/21, Industrial Landfill, Parcel E, Hunters Point
Shipyard, June 12, 2003

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June 12, 2003

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This public summary represents information presented in the document listed below. Neither the document nor the public summary has been reviewed by the regulatory agencies.

**Public Summary: Final Storm Water Discharge Management Plan
IR-01/21 Industrial Landfill, Parcel E, Hunters Point Shipyard,
San Francisco, California, June 12, 2003**

Tetra Tech EM Inc. prepared this storm water pollution discharge management plan (SWDMP) for the U.S. Department of the Navy, Naval Facilities Engineering Command, Southwest Division, to meet the substantive regulatory requirements for storm water discharges to San Francisco Bay (Bay) from the inactive Industrial Landfill in Installation Restoration Site 01/21 (IR-01/21) at Parcel E of Hunters Point Shipyard (HPS) in San Francisco, California. The SWDMP discusses the regulatory requirements for storm water discharges associated with industrial activities, the non-storm water discharge elimination and prevention program (NSDEPP), the storm water pollution prevention plan (SWPPP), and the monitoring and reporting program plan (MRPP). In addition, the operation and maintenance plan for the IR-01/21 Industrial Landfill contains information relevant to the SWDMP and should be considered along with the SWDMP.

Storm water discharges associated with industrial activities are regulated through the California State Water Resources Control Board Water Quality Order No. 97-03-DWQ, General Permit. However, because the IR-01/21 landfill is under the Navy Installation Restoration Program and the authority of the Comprehensive Environmental Response, Compensation, and Liability Act, this SWDMP will meet the substantive requirements of State Water Resources Control Board Water Quality Order No. 97-03-DWQ.

The main requirements of the General Permit are to (1) eliminate unauthorized non-storm water discharges, (2) develop and implement a SWPPP, and (3) perform monitoring of storm water discharges and authorized non-storm water discharges.

The SWDMP meets these requirements by incorporating a NSDEPP, a SWPPP, and a MRPP. The SWDMP also includes as appendices the necessary guidelines and forms to perform the surveys, visual observations, maintenance, sampling, compliance evaluation, best management practices, and reporting required under the General Permit.

Information Repositories: A complete copy of the "Final Storm Water Discharge Management Plan, IR Site 01/21, Industrial Landfill, Parcel E, Hunters Point Shipyard," dated June 12, 2003, is available to community members at:

San Francisco Main Library
100 Larkin Street
Government Information Center, 5th Floor
San Francisco, CA 94102
Phone: (415) 557-4500

Anna E. Waden Library
5075 Third Street
San Francisco, CA 94124
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The report is also available to community members upon request to the U.S. Department of the Navy. For more information about environmental investigation and cleanup at Hunters Point Shipyard, contact Mr. Keith S. Forman of the Navy at (619) 532-0913 (phone), (619) 532-0995 (fax), or formank@efdswnavfac.navy.mil (e-mail).

DRAFT (REVISION 1)
STORM WATER DISCHARGE MANAGEMENT
PLAN FOR THE INDUSTRIAL LANDFILL,
PARCEL E-2

DATED 30 SEPTEMBER 2004

IS ENTERED IN THE DATABASE AND FILED AT
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FINAL (REVISION 1)
STORM WATER DISCHARGE MANAGEMENT
PLAN FOR THE INDUSTRIAL LANDFILL,
PARCEL E-2

DATED 01 FEBRUARY 2005

IS ENTERED IN THE DATABASE AND FILED AT
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ACRONYMS AND ABBREVIATIONS

40 CFR	Title 40 of the <i>Code of Federal Regulations</i>
BAT	Best available technology
Bay	San Francisco Bay
BCPCT	Best conventional pollutant control technology
BMP	Best management practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
HPS	Hunters Point Shipyard
IR	Installation Restoration
IR-01/21	IR Site 01/21
MDL	Method detection limit
MRPP	Monitoring and reporting program plan
Navy	U.S. Department of the Navy
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NSDEPP	Non-storm water discharge elimination and prevention program
O&M	Operation and maintenance
OPNAVINST	Operating Naval Instructions
QA/QC	Quality assurance and quality control
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SWDIV	Naval Facilities Engineering Command, Southwest Division
SWDMP	Storm water discharge management plan
SWPPP	Storm water pollution prevention plan
SWRCB	California State Water Resources Control Board
Tetra Tech	Tetra Tech EM Inc.
UCSF	University of California, San Francisco

1.0 INTRODUCTION

Tetra Tech EM Inc. (Tetra Tech) developed this storm water discharge management plan (SWDMP) to meet substantive regulatory requirements for storm water discharges to San Francisco Bay (Bay) from the inactive Industrial Landfill in Installation Restoration (IR) Site 01/21 (IR-01/21) at Parcel E of Hunters Point Shipyard (HPS) in San Francisco, California. This SWDMP was prepared for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command, Southwest Division (SWDIV).

The Navy developed an operation and maintenance (O&M) plan (Tetra Tech 2003) for the landfill concurrently with the SWDMP. Maintenance activities discussed in this SWDMP, such as improving roads and installing a sedimentation basin, will be conducted as part of the routine O&M activities at the landfill. Inspections conducted under the SWDMP are separate from, but complimentary to, inspections performed under the O&M plan.

1.1 REGULATORY BACKGROUND

In June 1997, the Navy submitted a Notice of Intent (NOI) for the basewide storm water program at HPS. The NOI does not cover sites under the IR Program, which includes IR-01/21 and the Industrial Landfill area. Under the IR Program, the Navy is performing environmental investigations and cleanup under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Under CERCLA, the SWDMP complies with the substantive requirements of California State Water Resources Control Board's (SWRCB) Water Quality Order No. 99-08-DWQ. The requirements of the order are considered applicable or relevant and appropriate requirements. The following sections discuss the Federal and California regulations that pertain to storm water discharges.

1.1.1 Federal Regulations

In 1972, the federal Water Pollution Control Act, also referred to as the Clean Water Act (CWA), was amended to provide that the discharge of pollutants to waters of the United States from any point source is effectively prohibited, unless the discharge complies with a National Pollutant Discharge Elimination System (NPDES) permit. The 1987 CWA amendments added Section 402(p), which established a framework for regulating municipal and industrial storm water discharges under the NPDES program. On November 16, 1990, the U.S. Environmental Protection Agency (EPA) published final regulations that established storm water permit application requirements for specified categories of industries. The regulations are published in Title 40 *Code of Federal Regulations* (40 CFR) Parts 122, 123, and 124.

Permits for discharge of industrial storm water must meet all applicable provisions of Sections 301 and 402 of the CWA. These provisions require reducing pollutants in storm water discharges using (1) best available technology (BAT), (2) best conventional pollutant control technology (BCPCT), or (3) more stringent controls necessary to meet water quality standards. EPA regulations in 40 CFR (Subchapter N) establish numeric effluent limitations for storm water

discharges from certain designated industrial categories. For these categories, compliance with the effluent limitations constitutes compliance with BAT and BCPCT for the specified pollutants.

Industrial activities that are not identified in the industrial categories in 40 CFR Subchapter N are not required to meet numeric effluent limitations. For these activities to be in compliance, dischargers must develop and implement a site-specific storm water pollution prevention plan (SWPPP) that includes best management practices (BMP) to reduce or prevent the discharge of pollutants associated with industrial activities in storm water and authorized non-storm water. Incorporation of BMPs, which may include control of storm water discharges along with reduction of pollutants at the source, constitutes BAT and BCPCT and achieves compliance.

Two types of permits are issued under the NPDES storm water program for industrial facilities at the federal level. One is the “general permit,” which provides coverage to numerous facilities within a specific category. The other is the “individual permit,” which is tailored for the specific requirements of a particular facility. General permits are intended to cover most industrial facilities within a specific geographical area such as a city, county, or state. EPA has developed general permits for its regions and as models for the states. Under a general permit, all storm water dischargers are subject to the same basic permit conditions, although the permit could impose additional requirements for certain industries.

Federal regulations allow authorized states to issue general permits or individual permits to regulate industrial storm water discharges. Under the CWA, a state’s NPDES programs must be no less stringent than EPA’s programs.

1.1.2 California Regulations

EPA has delegated the authority to California to administer the NPDES program throughout the state in the same manner that EPA’s regional offices administer the program in nondelegated states. California may also issue general permits for categories of dischargers. The SWRCB and its nine Regional Water Quality Control Boards (RWQCB), created and empowered under the Porter-Cologne Water Quality Control Act, are responsible for administering the NPDES program in California.

The SWRCB, pursuant to the federal regulations, has issued a statewide general permit that applies to all industrial storm water discharges that require a permit except for construction activity. The California General Industrial Activities Storm Water Permit was issued as General Permit No. CAS000001 on November 19, 1991, and was amended on September 17, 1992. A new general permit was issued on April 17, 1997 (Waste Discharge Requirements for Discharge of Storm Water Associated with Industrial Activities Excluding Construction Activities, hereafter referred to as the “General Permit”), which modified many of the original requirements. Appendix A of this SWDMP contains a copy of the General Permit.

1.1.3 General Permit Provisions

The General Permit requires all facility operators to comply with the following provisions:

- Discharge Prohibitions
 - Discharges of materials other than storm water (non-storm water discharges) that discharge either directly or indirectly to waters of the United States are prohibited. Prohibited non-storm water discharges must be either eliminated or permitted by a separate NPDES permit.
 - Storm water discharges and authorized non-storm water discharges shall not cause or threaten to cause pollution, contamination, or nuisance.
- Effluent Limitations
 - Storm water discharges from facilities subject to storm water effluent limitation guidelines in federal regulations (40 CFR Subchapter N) shall not exceed the specified effluent limitations.
 - Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 or 40 CFR Part 302.
 - Facility operators covered by this General Permit must reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges through implementation of BAT for toxic and non-conventional pollutants and BCPCT for conventional pollutants. Development and implementation of a SWPPP that complies with the requirements in Section A of the General Permit and that includes BMPs that achieve BAT and BCPCT constitutes compliance with this requirement.
- Receiving Water Limitations
 - Storm water discharges and authorized non-storm water discharges to any surface or ground water shall not adversely affect human health or the environment.
 - Storm water discharges and authorized non-storm water discharges shall not cause or contribute to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan or the applicable RWQCB's Basin Plan. A facility operator will not be in violation of this receiving water limitation as long as the facility operator has implemented BMPs that achieve BAT and BCPCT and the following procedure is followed.

The facility operator shall submit a report to the appropriate RWQCB that describes the BMPs that are currently being implemented and the additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards. The report shall include an implementation schedule. The RWQCB may require modifications to the report.
 - Following approval of the report described previously by the RWQCB, the facility operator shall revise its SWPPP and monitoring program to incorporate (1) the additional BMPs that have been and will be implemented, (2) the implementation schedule, and (3) any additional monitoring required.

Other Applicable Water Quality Standards for Receiving Waters

The SWRCB adopted the California Ocean Plan on March 22, 1990. In April 1991, the SWRCB adopted two water quality control plans (the Inland Surface Water Plan and the Enclosed Bays and Estuaries Plan) that included numeric water quality criteria for priority toxic pollutants. These plans were rescinded when a lawsuit was brought by several dischargers that successfully challenged how the plans were adopted. As a result of that action, California has been without water quality standards for most priority pollutants since 1994 for inland surface waters, enclosed bays, and estuaries, as required by Section 303(c)(2)(B) of the CWA. In May 2000, the EPA under the authority of the CWA promulgated the California Toxics Rule, which established water quality criteria for priority pollutants for inland surface water, enclosed bays, and estuaries of California. These promulgated criteria, together with California-adopted designated uses in the above-mentioned Basin Plans, create water quality standards for those California waters.

1.1.4 Meeting the General Permit Provisions

To meet the General Permit provisions, dischargers need to complete the following compliance actions:

- File the NOI form
- Eliminate unauthorized non-storm water discharges (including illicit connections) to the storm water conveyance systems
- Develop, implement, and revise the SWPPP to be appropriate for site conditions
- Conduct annual site compliance evaluations
- Develop, implement, and revise a monitoring program
- Perform visual observations of storm water and non-storm water discharges
- Determine BMP effectiveness and discharge compliance under the monitoring program
- Maintain records for a minimum of 5 years
- Certify compliance
- Submit annual reports
- File a Notice of Termination (NOT) to terminate coverage

1.2 COMPLIANCE ACTIONS

The following sections discuss the compliance actions necessary to meet the requirements of the General Permit.

1.2.1 Storm Water Pollution Prevention Plan

The General Permit requires that dischargers develop, retain on site, and implement an SWPPP. The SWPPP has the following two primary objectives:

- Identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the facility (Section 1.2.1.1)
- Identify and implement site-specific BMPs to reduce or prevent pollutants associated with industrial activities in discharges (Section 1.2.1.2)

The SWPPP should contain a compliance activity schedule, a description of industrial activities and pollutant sources, descriptions of BMPs, drawings and maps, and relevant copies or references of other plans. The SWPPP should be revised when appropriate.

1.2.1.1 Identify and Evaluate Sources of Pollutants

The SWPPP must include the following items to identify and evaluate the sources of pollutants:

- A detailed site map (General Permit, Section A.4) that shows the following:
 - Facility boundaries and storm water drainage areas within the facility boundaries, including portions of the drainage area impacted by run-on from surrounding areas, the direction of flow of each drainage area, on-site surface water bodies, areas of soil erosion, and nearby water bodies and municipal storm drain inlets where the facility's storm water discharges and authorized non-storm water discharges may be received
 - Location of the storm water collection and conveyance system, including associated points of discharge, direction of flow, and any structural control measures such as catch basins, berms, and detention ponds
 - Outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures
 - Locations where materials are directly exposed to precipitation and locations where significant spills or leaks have occurred
 - Areas of industrial activity, including locations of all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage and maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and rinsing areas, and other areas of industrial activity that are potential pollutant sources

- A list of significant materials (such as raw materials, intermediate products, final or finished products, recycled materials, and waste or disposed materials) handled and stored at the site (General Permit, Section A.5) that includes descriptions of the following:
 - Locations where the material is being stored, received, shipped, and handled
 - Typical quantities and frequency
- A description and summary of potential pollutant sources (General Permit, Section A.6) that includes the following:
 - Industrial processes
 - Material handling and storage areas
 - Dust and particulate generating activities
 - Significant spills and leaks
 - Non-storm water discharges
 - Soil erosion areas
- An assessment of potential pollutant sources (General Permit, Section A.7) to determine the following:
 - Areas that are likely sources of pollutants in storm water discharges and authorized non-storm water discharges
 - Pollutants that are likely to be present in storm water discharges and authorized non-storm water discharges

1.2.1.2 *Identify and Implement Site-Specific BMPs*

The SWPPP must provide a description and summary of the BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. The descriptions should note whether the BMPs are existing or new and whether each BMP is effective.

The following two types of BMPs exist: non-structural and structural. Non-structural BMPs include good housekeeping, preventive maintenance, spill response, material handling and storage, employee training, waste handling and recycling, erosion control and site stabilization, inspections, and quality assurance. Structural BMPs include overhead coverage, retention ponds, control devices (such as berms), secondary containment structures, and discharge treatment.

1.2.2 *Monitoring Program*

The General Permit requires that all facilities develop and implement a monitoring and reporting program plan (MRPP). The MRPP has four objectives:

- Ensure that storm water discharges are in compliance with the discharge prohibitions, effluent limitations, and receiving water limitations specified in the General Permit (see also Section 1.1.3)
- Ensure that BMPs at the facility are evaluated and revised to meet changing conditions
- Aid in the implementation and revision of the SWPPP
- Measure the effectiveness of the BMPs

To meet these objectives, the facility must perform the following actions:

- Quarterly non-storm water discharge visual observations (General Permit, Section B.3)
- Monthly storm water discharge visual observations during the wet season, October 1 through May 31 (General Permit, Section B.4)
- Storm water sampling and analysis during two storm events of each wet season, including the first storm event (General Permit, Section B.5)
- Annual reporting to the RWQCB by July 1 (General Permit, Section B.14)

1.2.3 Record-Keeping

The SWDMP is a public document under Section 308(b) of the CWA. The plan must be retained on site, be maintained, and be made available to employees, the public, and representatives of EPA, SWRCB, RWQCB, or local government, as requested.

Records of visual observations, sampling and analysis procedures and results, annual comprehensive site compliance evaluations, all reports, documentation of BMP implementation, and data pertaining to the General Permit must be retained for a minimum of 5 years from the date of observation, measurement, report, or application. This period may be extended by the SWRCB or RWQCB.

1.2.4 Revisions

The General Permit requires the SWPPP to be revised when changes in industrial activities (1) may significantly increase the quantities of pollutants in storm water discharge, (2) cause a new area at the facility to be exposed to storm water, or (3) would introduce a new pollutant source at the facility. The SWPPP should be revised and implemented in a timely manner, but in no case more than 90 days after a facility operator determines that the SWPPP is in violation of any requirement of this General Permit.

1.2.5 Certifications of Compliance

The General Permit requires that all reports, certifications, or other information required by the General Permit or requested by EPA, SWRCB, RWQCB, or a local storm water management agency shall be signed by a principal executive officer or by a duly authorized representative. A person is a duly authorized representative only if (1) the authorization is made in writing by the principle executive officer and retained as part of the SWPPP and (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for named position.

The principle executive officer or duly authorized representative is required to make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

In addition, the General Permit requires that the facility operator comply with the following (General Permit, Section C):

- All conditions of the General Permit and the effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants
- The duty to mitigate any discharge in violation of the General Permit that has a reasonable likelihood of adversely affecting human health or the environment
- The proper operation and maintenance of facilities and systems of treatment and control to achieve compliance with the conditions of the General Permit and the SWPPP
- The duty to provide requested information to the public
- The duty to provide requested information and HPS access to the RWQCB, SWRCB, EPA, and local storm water management agencies
- Notification to the RWQCB, within 14 days, of any noncompliance issues and any anticipated noncompliance issues associated with alterations or additions that could significantly change the nature or increase the quantity of pollutants discharged

The permitted facility must notify the RWQCB of any periods of noncompliance. The notification must be submitted with the annual report and describe the noncompliance and its cause, indicate the period of noncompliance, indicate if the noncompliance has been corrected, include a schedule for the correction, and indicate the corrective measures to reduce or prevent recurrence of the noncompliance.

Noncompliance with the General Permit is a violation of the CWA and the California Porter-Cologne Water Quality Control Act. Any person who violates any General Permit condition is subject to a civil penalty allowed by the Porter-Cologne Water Quality Control Act not to exceed \$25,000 per day of such violation, as well as any other appropriate sanction provided by Section 309 of the CWA. Section 309 of the CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under the General Permit, including reports of compliance or noncompliance, is subject to a fine of not more than \$10,000 or by imprisonment for not more than 2 years, or both.

1.2.6 Termination of General Permit Coverage

Dischargers may request to terminate their coverage under the General Permit by filing a NOT with the RWQCB. All industrial facilities subject to the General Permit must be terminated, including exposure of industrial equipment, materials, and waste to storm water. The NOT will include a basis for termination and a certification that all storm water discharges associated with industrial activities covered under the General Permit have been eliminated. The following actions are required:

- Step 1: As industrial facilities are removed from the operation or closed, the SWDMP will be modified to reflect the changed conditions.
- Step 2: After all industrial facilities are closed, the Activity will be inspected by Activity personnel for potential sources of storm water pollutants. To request termination of coverage by the General Permit, all industrial facilities subject to the regulations must have been terminated, including the exposure of industrial equipment, materials, and waste to storm water. The date on which industrial facilities are terminated and cleanup or closure activities are completed will be recorded by the facility. Request for termination of coverage may also be made if storm water associated with industrial activity no longer discharges to waters of the United States. This would mean that all industrial storm water is retained on site, treated and disposed of with process wastewater, discharged to a municipal sanitary sewer system or municipal combined sewer system, or discharged to evaporation ponds or percolation ponds off site. If ownership or operation of the facility is transferred, then the previous owner or operator must request termination of coverage, and the new owner or operator must submit a NOI and fee for coverage under the General Permit. The date of transfer and information about the new owner or operator will be provided.
- Step 3: A NOT must be filed with the Executive Officer of the RWQCB. The NOT will include a basis for termination and a certification that all storm water discharges associated with industrial activity that are covered by the General Permit have been eliminated.

RWQCB may inspect the Activity before accepting the basis of termination. Appendix C contains a NOT form.

1.3 NAVY STORM WATER PROGRAM

As defined by the Chief of Naval Operations in the Navy's *Environmental and Natural Resources Program Manual* (Operating Naval Instructions [OPNAVINST] 5090.1B), which is the primary guidance for Navy policies and procedures for managing environmental and natural resource programs, the Navy's environmental vision is to be recognized as an environmental leader while effectively executing naval operations. Navy policy with respect to storm water management requires all Commands to assure that all activities comply with storm water management and pollution prevention requirements, as stipulated in permits under which the activities are covered.

To comply with Navy storm water policy, SWDIV developed a program for naval activities in its area of responsibility, which includes northern California, to comply with federal and California storm water regulations. The program began in 1992, when the Navy and Marine Corps filed NOIs with the SWRCB to gain coverage for specific naval activities under California's General Permit.

The original SWDMPs for many SWDIV Activities were completed in 1993. The SWDIV SWDMP is a complete and comprehensive compliance document, developed to meet the California requirements described above. The SWDMP establishes policy, responsibilities, procedures, and technical guidance on the prevention and reduction of pollution of storm water runoff from industrial areas. Each SWDIV SWDMP includes an Activity description, a non-storm water discharge elimination and prevention program (NSDEPP), a SWPPP, and a MRPP.

1.4 STORM WATER DISCHARGE MANAGEMENT PLAN FOR INSTALLATION RESTORATION SITE 01/21 AND THE INDUSTRIAL LANDFILL

HPS demonstrated its intent to comply with the General Permit by submitting a NOI and an abbreviated NOI to the SWRCB in February 1995 and June 1997, respectively, for the basewide SWDMP. HPS has complied with the requirements of the General Permit, as reported in each annual report submitted to the RWQCB by July 1 of each year. The original SWDMP for HPS was finalized in August 1994 and has been updated to reflect changes in both operations and the Activity and changes to the General Permit.

1.4.1 Organization

This SWDMP is organized into the following five sections:

- Section 1.0, Introduction, describes the federal and state storm water permitting regulations, the Navy storm water program, and the organization of this SWDMP.
- Section 2.0, Certifications and Revisions, describes the process to certify and revise the SWDMP when changes in industrial activities may cause or affect storm water discharges.
- Section 3.0, Non-Storm Water Discharge Elimination and Prevention Program, discusses the program to identify and eliminate prohibited and unauthorized non-storm water discharges.
- Section 4.0, Storm Water Pollution Prevention Plan, identifies the potential sources of storm water pollutants at HPS and identifies BMPs for reducing or preventing the discharge of pollutants into storm water runoff.
- Section 5.0, Monitoring and Reporting Program Plan, describes the storm water sampling and analysis, storm water discharge and visual observations, non-storm water discharge visual observations, and the records and reporting requirements.
- Section 6.0, References, lists the sources used to prepare this SWDMP.

Figures and tables follow their first mention in the text of this document. Appendix A contains the General Permit, Appendix B contains the NOI, and Appendix C contains the NOT. Appendix D provides the illicit connection/non-storm water discharge identification and testing protocol. Appendix E provides instructions for performing non-storm water visual observations. Appendix F provides instructions for performing storm water visual observations. Appendix G provides sampling instructions. Appendix H contains the maintenance activities form. Appendix I provides the quality assurance/quality control (QA/QC) guidance document plan. Appendix J contains the BMPs. Appendix K provides the instructions to perform the annual comprehensive site compliance evaluation. Appendix L provides the SWRCB annual report form. Appendix M provides general specifications for installing fiber rolls and silt fences. Appendix N contains the responses to regulatory agency comments on the draft SWDMP dated January 7, 2003.

1.4.2 Terminology

The following terms are commonly used throughout this SWDMP:

- “Facility” and “industrial facility” refer to a collection of industrial processes that discharge storm water associated with industrial activity within the property boundary or operational unit.
- “Significant quantities” refers to the volume, concentrations, or mass of a pollutant that can cause or threaten to (1) cause pollution, contamination, or nuisance; (2) adversely affect human health or the environment; or (3) cause or contribute to a violation of any applicable water quality standards for the receiving water.

- “Significant spills” refers, but is not limited, to releases of oil or hazardous substances that exceed reportable quantities under Section 311 of the CWA (see 40 CFR 110.10) or Section 102 of CERCLA (see 40 CFR 302.4).
- The term “Activity” is used in this SWDMP to indicate an entire Navy or Marine Corps base or group of Navy or Marine Corps activities covered by the NOI. One Activity, therefore, may include many industrial facilities that are covered by the SWDMP.

1.4.3 Revision of the Storm Water Discharge Management Plan

The Navy will revise the SWDMP when changes occur that (1) may significantly increase the quantities of pollutants in the storm water discharge, (2) cause a new area of industrial activity at the site to be exposed to storm water, or (3) would introduce a new pollutant source at the site.

1.4.4 Annual Report

The Activity will submit an annual report that includes (1) a summary and evaluation of visual observations and sampling results, (2) laboratory reports, (3) the annual comprehensive site compliance evaluation report, (4) explanations of why the Activity did not implement any tasks required by the General Permit, and (5) records specified under the monitoring program requirements (Section 5.5). The annual report must also be signed and certified in the same manner as this SWDMP (described in Section 2.1).

2.0 REQUIREMENTS FOR CERTIFICATION AND REVISION

This section discusses the requirements under the General Permit for certification and revision.

2.1 CERTIFICATION

To meet the certification requirements of the General Permit, this SWDMP includes a Certification of Compliance form that will be signed by the duly authorized representative of the Commanding Officer. The form is provided on the following page (Figure 1).

A person is a duly authorized representative only if the following two conditions are met:

- Authorization is made in writing and retained as part of the SWDMP
- Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or site such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for HPS. Therefore, a duly authorized representative may be either a named individual or any individual occupying a named position

FIGURE 1: CERTIFICATION OF COMPLIANCE

I certify under penalty of law that I personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature: _____

Name: _____

Document Title: Final Storm Water Discharge Management Plan, IR-01/21,
Industrial Landfill, Parcel E, Hunters Point Shipyard,
San Francisco, California

Date: June 12, 2003

2.2 REVISIONS

The General Permit requires that the SWDMP be revised when changes occur that (1) may significantly increase the quantities of pollutants in the storm water discharge, (2) cause a new area of industrial activity at the site to be exposed to storm water, or (3) would introduce a new pollutant source at the site. The plan must also be revised whenever its provisions or requirements are in violation of any condition of the General Permit or it has not achieved the general objectives of controlling pollutants in the storm water discharges. The plan shall be revised and implemented in a timely manner, but in no case more than 90 days after a facility operator determines that the plan is in violation of any requirements of the General Permit. When any part of the plan is infeasible to implement within 90 days because of proposed significant structural changes, the facility operator shall submit a report to the RWQCB before the applicable deadline that provides the following:

- A description of the portion of the plan that is infeasible to implement by the deadline
- Justification for a time extension
- A schedule for completing and implementing that portion of the plan
- A description of the BMPs that will be implemented in the interim period to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges

Facility operators shall provide written notification to the RWQCB within 14 days after revisions are implemented.

3.0 NON-STORM WATER DISCHARGE ELIMINATION AND PREVENTION PROGRAM

One of the major elements of the SWPPP is the elimination of unauthorized non-storm water discharges. The NSDEPP is separated from the SWPPP for ease of use. This section discusses how this plan meets the General Permit's requirements for an NSDEPP.

3.1 INTRODUCTION

Non-storm water discharges entering the facility's storm drain system from illicit connections and illegal dumping can contribute a significant pollutant load to receiving waters. The purpose of the NSDEPP is to identify, eliminate, and prevent unauthorized non-storm water discharges from entering the storm drain system.

3.2

POLICY AND RESPONSIBILITIES

The General Permit authorizes the following non-storm water discharges under specific conditions:

- Fire hydrant flushing
- Potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems
- Drinking fountain water
- Atmospheric condensates, including refrigeration, air conditioning, and compressor condensate
- Irrigation drainage
- Landscape watering
- Springs
- Groundwater
- Foundation or footing drainage
- Seawater infiltration where the sea waters are discharged back into the seawater source

These discharges are authorized if all the following conditions are met:

- Discharges are in compliance with RWQCB requirements
- Discharges are in compliance with local agency ordinances and requirements
- BMPs are specifically included in the SWPPP to (1) prevent or reduce the contact of non-storm water discharges with significant materials or equipment and (2) minimize, to the extent practicable, the flow or volume of non-storm water discharges
- Discharges do not contain significant quantities of pollutants
- Monitoring programs include quarterly visual observations of each non-storm water discharge and its sources to ensure that BMPs are being implemented and are effective
- Discharges are reported and described in the annual report

The only non-storm water discharge expected at the site is from irrigation (of the landfill cap) and does not pose a threat to storm water quality.

3.3 IDENTIFICATION OF NON-STORM WATER DISCHARGES

To eliminate and prevent unauthorized non-storm water discharges, the presence and location of any discharge source must first be determined. Non-storm water discharges are identified by conducting a basewide visual field survey and physical investigation of the storm drain system. In 1996, a storm drain survey of the lines beneath IR-01/21 was performed (International Technology Corporation 1999). The survey determined that the lines were intact and in sound condition and there was only minimal sediment load.

Appendix D discusses the methodologies and includes associated forms for documentation of the procedures for determining prohibited non-storm water discharges. These methodologies are used to perform the following tasks.

- Identify the presence of prohibited non-storm water discharges at Activity outfalls.
- Locate illicit connections to the storm drain system.
- Provide information needed for the development of OPNAVINST 11010.20E, Part 2 – Preparation and Submission of Special Project Step Two Documentation, for projects requiring significant structural modifications to eliminate illicit connections, including the engineering and detailed cost data necessary to define and justify the work to be accomplished.

3.3.1 Visual Observations

The first step to identify non-storm water discharges and their sources is visually observing the storm drain system. Because an organized approach is needed to identify non-storm water discharges, instructions for conducting the visual observations are provided in Appendix E.

The initial HPS basewide SWPPP (PRC Environmental Management, Inc. [PRC] and Montgomery Watson 1994) contained appendices addressing an illicit discharge prevention program that was part of the SWPPP. The results of the illicit discharge survey, which included field surveys, did not identify any illicit connections at IR-01/21. Additionally, quarterly visual observations of non-storm water discharges were required by the General Permit. The protocol for these observations is presented in Appendix E. Visual observations of non-storm water discharge have been conducted annually since. Results of the observations are described in the annual reports, as discussed in Section 5.0 of this plan.

3.3.2 Illicit Connection Testing

Physical investigations of the storm drain system may include dyed-water trace testing, smoke testing, and video-camera inspection of manholes, catch basins, and pipelines. One or more of these tests should identify the source of a non-storm water discharge from an illicit connection.

Based on previous visual inspections, no illicit connections have been found at IR-01/21. In addition, no storm drain outfall exists at IR-01/21.

3.4 ELIMINATION AND PREVENTION OF NON-STORM WATER DISCHARGES

The NSDEPP is being implemented and its provisions are being substantially accomplished. Elimination and prevention of non-storm water discharges are continuing concerns at industrial facilities. Because new construction, new activities, and changed activities are ongoing at the Activity, provisions of the NSDEPP are also ongoing. The program now emphasizes ongoing and new requirements of the General Permit to inspect, report, and eliminate new sources that may occur.

3.4.1 Review of Project Plans and Specifications

The most effective technique to control illicit connections to the storm drain system is for experienced staff to incorporate illicit connection prevention into new construction, repair, or modification projects during the design phase. To control illicit connections, personnel experienced in piping design, routing, and illicit connection hookups should provide technical review for plans and specifications associated with the constructions of new facilities and repair or modification of existing facilities.

3.4.2 Maintenance Activities

In addition to BMPs employed by Activity personnel, proper and routine maintenance of the storm drain system will help minimize the entry of non-storm water discharges. Storm drains may fill up with sediment and become clogged over time. Drainage swales may erode, thereby becoming a source of sediment pollution to storm water. In addition, leaking sanitary sewer piping may cause infiltration and contamination of the storm drain system.

The General Permit requires a preventative maintenance program that includes the inspection and maintenance of the storm drain system. Also required is the inspection and testing of equipment and systems that could fail and result in the discharge of pollutants to the storm drains. Preventive maintenance should be performed regularly and should include inspection, cleaning, and repair of the following:

- Aboveground storage tanks and underground storage tanks
- Manholes and catch basins
- Detention ponds
- Oil/water separators
- Outfall pipes
- Drainage swales
- Roofs and siding
- Site drainage weirs and shut-off valves

Cleaning and removing sediment deposits are necessary maintenance actions to ensure proper functioning of the storm drain system. Cleaning should occur just before the wet season to remove sediment and debris accumulated during the summer. An accurate log should be kept for the area of the storm drain piping cleaned, manholes and catch basins cleaned, and the amount of waste collected. This log can be used to identify areas that require more frequent cleaning and implementation of BMPs.

Inspections should also be recorded. Signs of corrosion, erosion, and scaling, as well as overall structural integrity, should be noted, and corrective measures should be recommended for implementation. Inspections should be assigned to a set schedule. Quarterly inspections are recommended; however, a more suitable frequency may be implemented depending on the specific needs of the storm drain system. Inspection personnel should be provided a site plan showing the locations of all storm water drainage systems to be inspected. Inadequate or infrequent inspections should be avoided because they could result in increased cleaning and repair costs and may lead to permit violations. Appendix H provides a form to record information about maintenance activities.

3.4.3 Recommended Preventive Measures

Activity operations and maintenance staff can implement the following preventive measures to prevent prohibited non-storm water discharges to the storm drain system:

- Design engineers should incorporate illicit connection prevention into new construction, repair, or modification during the project design phase. Additionally, field engineers and construction teams should confirm proper design before construction begins.

- Sinks should be connected to the sanitary sewer or other disposal locations. “As-built,” piping diagrams, and building or site plans should be inspected to verify that the sinks are not connected to the storm drain system. Additional reconnaissance may be performed to identify plumbing changes not shown on available plans. If an illicit connection to the storm drain system is suspected, additional testing, as outlined in Appendix D, should be performed.
- Unknown materials may be present in prohibited non-storm water discharges resulting from improper disposal of wastes or illicit connections to the storm drain system. Adequate reporting procedures should be developed and made available to personnel who may observe either illegal dumping or a prohibited non-storm water discharge. Information about reporting procedures should be posted in all industrial facilities, and an individual or team should be designated to respond to such reports.

3.4.4 Training for Non-Storm Water Discharge Elimination and Prevention Program Users

Training of personnel is essential to an effective NSDEPP. Personnel must be able to locate and identify non-storm water discharges and illicit connections and be familiar with methods to prevent and eliminate these discharges and connections. Training related to the effective management of petroleum and hazardous substances enables personnel to easily identify those conditions that may cause prohibited non-storm water discharges.

Personnel training should be based on four objectives:

1. Promote a clear identification and understanding of the problem, including facilities with the potential to pollute storm water and the regulations enforcing compliance
2. Identify corrections
3. Promote personal ownership of the problems and the solutions
4. Integrate personnel feedback into training and implementation

Instructors should have training and experience in illicit connection identification and prevention. Instructors should also possess a basic understanding of pipe design and pipe rerouting and knowledge of pertinent plumbing codes. Additionally, instructors should have a thorough understanding of BMPs, including their application and implementation.

Training should contain the following:

- Overview of environmental regulations, with emphasis on provisions of the General Permit and its requirements for illicit connection elimination
- Illicit connection identification

- Review and history of IR-01/21 and the different piping and drain systems (storm water and sanitary sewer)
- Instructions on illicit connection elimination, including pipe retrofitting, capping, and elimination
- Instructions on proper and consistent methods for disposal

Training about illicit connection prevention and prohibited non-storm water discharge prevention can be integrated with existing training programs that may be required by other regulations such as the following:

- Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120)
- Spill Prevention, Control, and Countermeasures Plan (40 CFR 112)
- Hazardous Materials Management Plan, also known as the Business Plan (*California Health and Safety Code*, Section 6.95)

Proper communication, along with trained personnel, will assist in preventing illicit connections and prohibited non-storm water discharges.

4.0 STORM WATER POLLUTION PREVENTION PLAN

This section describes how this SWDMP meets the requirements for a SWPPP and identifies the BMPs to be used at IR-01/21.

4.1 INTRODUCTION

The General Permit requires the development and implementation of an SWPPP. The requirements of the SWPPP are listed below.

- A detailed site map with relevant information
- A list of significant materials handled and stored at the facility that includes the location where the material is stored, received, shipped and handled, and typical quantities and frequency
- A description of potential pollution sources, including industrial processes, material handling and storage activities, dust and particulate generating activities, spills and leaks, non-storm water discharges, and areas of soil erosion

- An assessment of each potential pollutant source to identify areas that are possible sources of pollutants in storm water discharges and authorized non-storm water discharges
- Implementation of BMPs or other control measures to reduce pollutants in storm water discharges
- Designation of personnel responsible for the implementing and maintaining the SWPPP
- Elimination of all unauthorized non-storm water discharges
- Implementation of a plan to communicate the SWPPP requirements to responsible personnel
- An annual site compliance evaluation to identify the need for any revisions to the plan

This SWPPP for IR-01/21 focuses on the area around the Industrial Landfill as a potential source of storm water pollutants. Industrial activities do not currently occur at this site; therefore, soil erosion and sedimentation control are the primary concerns. Any other industrial facilities located on or near the landfill site and outside of IR-01/21 are addressed in the basewide SWDMP for HPS.

4.1.1 Objectives

The SWPPP has the following two primary objectives:

1. To identify and evaluate pollutant sources associated with the landfill that may affect the quality of storm water discharges and authorized non-storm water discharges
2. To identify and implement site-specific BMPs to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges

4.1.2 Incorporation by Reference

Some of the specific information required by the General Permit is included in a variety of documents that have been developed by the Navy to comply with other regulatory, governmental, and operational requirements. The General Permit allows this information to be incorporated by reference. Specifically, the General Permit's Subsection 3.b of Section A, Storm Water Pollution Prevention Plan Requirements, reads as follows:

“b. Review Other Requirements and Existing Facility Plans

The SWPPP may incorporate or reference the appropriate elements of other regulatory requirements. Facility operators should review all local, State, and Federal requirements that impact, complement, or are consistent with the requirements of this General Permit. Facility operators should identify any existing facility plans that contain storm water pollutant control measures or relate to the requirements of this General Permit.”

Figure 2 summarizes (in bold italics) the General Permit SWPPP requirements that have been incorporated by referencing the following documents and programs:

- “Storm Water Pollution Prevention Plan, Hunters Point Annex, San Francisco, California” (PRC and Montgomery Watson 1994)
- “Storm Water Discharge Management Plan Update, Hunters Point Shipyard, San Francisco, California” (LawCrandall 2001)
- Installation Restoration Program
- Superfund Amendment and Reauthorization Act (SARA) Title 3, Emergency Planning and Community Right-to-Know Act, August 1993
- “O&M Plan, IR-01/21, Industrial Landfill, Parcel E, Hunters Point Shipyard, San Francisco, California” (Tetra Tech 2003)

4.1.3 Organization

The SWPPP for IR-01/21 is organized into five sections. The sections supplement the documents incorporated by reference. Together they meet the SWPPP requirements of the General Permit. Section 4.1, Introduction, states the objectives of the SWPPP and describes the organization. Section 4.2, IR-01/21 Description, describes the location, drainage and topography, historical and current land uses, and industrial facilities of IR-01/21. Section 4.3, IR-01/21 Storm Water Pollution Prevention Plan, describes the site’s industrial activities, associated potential pollutant sources, potential storm water pollutants, and associated BMPs. Section 4.4, Annual Comprehensive Site Compliance Evaluation, discusses the purpose and the protocol for completing this evaluation. Section 4.5, Personnel Training, discusses training of personnel to implement the SWPPP.

FIGURE 2
PERMIT PROVISION
(bold italics items are incorporated by reference)

A.4. Site Map

The SWPPP shall include a site map. The site map shall be provided on an 8 ½ X 11 inch or larger sheet and include notes, legends, and other data as appropriate to assure that the site map is clear and understandable. If necessary, facility operators may provide the required information on multiple site maps. The following information shall be included on the site map:

- a. The facility boundaries; the outline of all storm water drainage areas within the facility boundaries; portions of the drainage area impacted by run-on from surrounding areas; direction of flow of each drainage area; on-site surface water bodies; and areas of soil erosion. The map shall also identify nearby water bodies (such as rivers, lakes, ponds) and municipal storm drain inlets where the facility's storm water discharges and authorized non-storm water discharges may be received.
- b. The location of the storm water collection and conveyance system, associated points of discharge, and direction of flow. Include any structural control measures that affect storm water discharges, **authorized non-storm water discharges**, and run-on. Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.
- c. An outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures.
- d. *Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified in Section A.6.a.iv. below have occurred.*
- e. *Areas of industrial activity. This shall include the locations of all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and rinsing areas, and other areas of industrial activity which are potential pollutant sources.*

A.5. List of Significant Materials

The SWPPP shall include a list of significant materials handled and stored at the site. For each material on the list, describe the locations where the material is being stored, received, shipped, and handled, as well as the typical quantities and frequency. Materials shall include raw materials, intermediate products, final or finished products, recycled materials, and waste or disposed materials.

A.6. Description of Potential Pollutant Sources

a. *The SWPPP shall include a narrative description of the facility's industrial activities, as identified in Section A.4.e above, associated potential pollutant sources, and potential pollutants that could be discharged in storm water discharges or authorized non-storm water discharges. At a minimum, the following items related to a facility's industrial activities shall be considered:*

i. **Industrial Processes**

Describe each industrial process, the type, characteristics, and quantity of significant materials used in or resulting from the process, and a description of the manufacturing, cleaning, rinsing, recycling, disposal, or other activities related to the process. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

ii. **Material Handling and Storage Areas**

Describe each handling and storage area, type, characteristics, and quantity of significant materials handled or stored, description of the shipping, receiving, and loading procedures, and the spill or leak prevention and response procedures. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

iii. **Dust and Particulate Generating Activities**

Describe all industrial activities that generate dust or particulates that may be deposited within the facility's boundaries and identify their discharge locations; the characteristics of dust and particulate pollutants; the approximate quantity of dust and particulate pollutants that may be deposited within the facility boundaries; and a description of the primary areas of the facility where dust and particulate pollutants would settle.

iv. **Significant Spills and Leaks**

Describe materials that have spilled or leaked in significant quantities in storm water discharges or non-storm water discharges since April 17, 1994. Include toxic chemicals (listed in 40 CFR, Part 302) that have been discharged to storm water as reported on U.S. Environmental Protection Agency (U.S. EPA) Form R, and oil and hazardous substances in excess of reportable quantities (see 40 Code of Federal Regulations [CFR], Parts 110, 117, and 302). The description shall include the type, characteristics, and approximate quantity of the material spilled or leaked, the cleanup or remedial actions that have occurred or are planned, the approximate remaining quantity of materials that may be exposed to storm water or non-storm water discharges, and the preventive measures taken to assure spills or leaks do not reoccur. Such list shall be updated as appropriate during the term of this General Permit.

v. **Non-Storm Water Discharges**

Facility operators shall investigate the facility to identify all non-storm water discharges and their sources. As part of this investigation, all drains (inlets and outlets) shall be evaluated to identify whether they connect to the storm drain system. All non-storm water discharges shall be described. This shall include the source, quantity, frequency, and characteristics of the non-storm water discharges and associated drainage area.

4.2 INSTALLATION RESTORATION SITE 01/21 DESCRIPTION

The location, surface drainage, topography, historical and current land uses, and industrial facilities at IR-01/21 are discussed in the following sections.

4.2.1 Location

IR-01/21 and the Industrial Landfill are located at the western end of HPS. HPS is located in southeast San Francisco, adjacent to the Bay. Figure 3 shows the vicinity of HPS and the location of IR-01/21 and the Industrial Landfill at HPS. IR-01/21 is 35 acres in area that is bounded to the north by the University of California, San Francisco (UCSF) compound and the Parcel E fence, to the south by the Bay shoreline, to the west by the Parcel E fence, and to the east by the railroad tracks. The Industrial Landfill is about 20 acres and covers the eastern portion of IR-01/21. The landfill area is not used for any industrial activity.

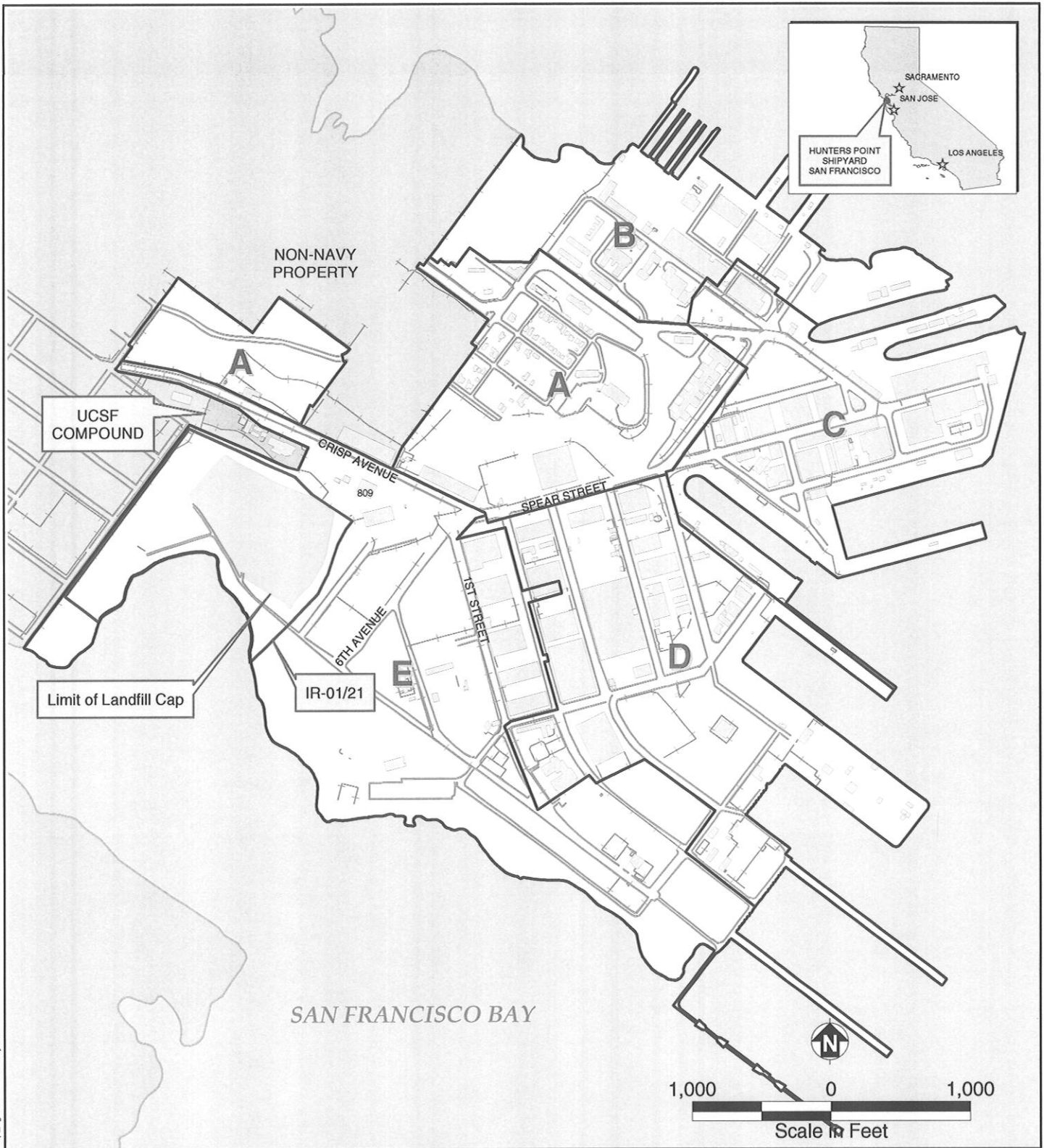
4.2.2 Drainage and Topography

IR-01/21 is entirely unpaved land and contains no buildings. The southwestern portion of IR-01/21 is dominated by low-lying freshwater seasonal wetlands. Storm water discharge from the site is controlled on the west side by constructed drainage channels that discharge indirectly to the Bay through the low-lying freshwater seasonal wetlands. In the southeastern portion of the site, runoff flows into the Bay. In the northeastern portion of the site, runoff drains into the existing storm water sewer system that discharges at Outfall 33 located at the southern end of Parcel E. Figure 4 shows the topography and drainage patterns of the site.

The landfill cap encompasses about 14.8 acres and gently slopes inward toward a central riprap-lined drainage swale except at the edges, where the cap slopes outward toward the surrounding landscape. The surface of the cap is completely vegetated. The surface elevations of the cap range from a high of 30 feet to an average of 15 feet around the edges. The drainage swale crosses the cap in a north-northeast to south-southwest trend. The cap also contains a subsurface drainage layer that drains into a 4-inch-diameter corrugated and perforated drainpipe that sits in a 1-by-1-foot trench. The swale drains to the southwest toward the Bay. Water sources to the cap include rain that falls directly on the cap and water supplied by the irrigation system.

North of the cap, the topography slopes downward from the edge of the cap toward the north-northeast, in the direction of the UCSF compound. Water sources in this area include rain that falls on the area and storm water that drains from the parking lot within the UCSF compound.

West of the cap, surface water flows to the southwest into a ditch along the western property line, which discharges into a low-lying freshwater seasonal wetland. Surface water eventually discharges into the Bay via a 24-inch pipe through the dike at the edge of the wetland. Water sources in this area include rain that falls on the area and storm water that drains from the area northwest of the cap through a newly constructed drainage ditch that ties into the existing western drainage ditch. In the area south and southeast of the cap, the topography slopes to the



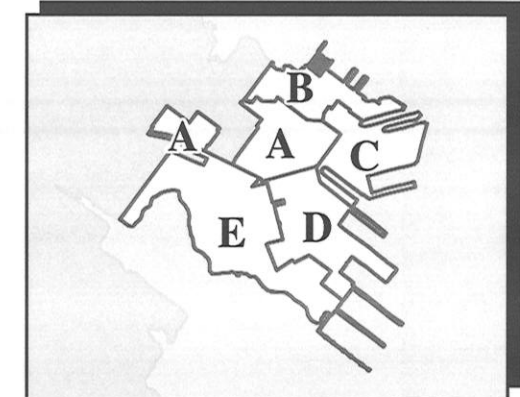
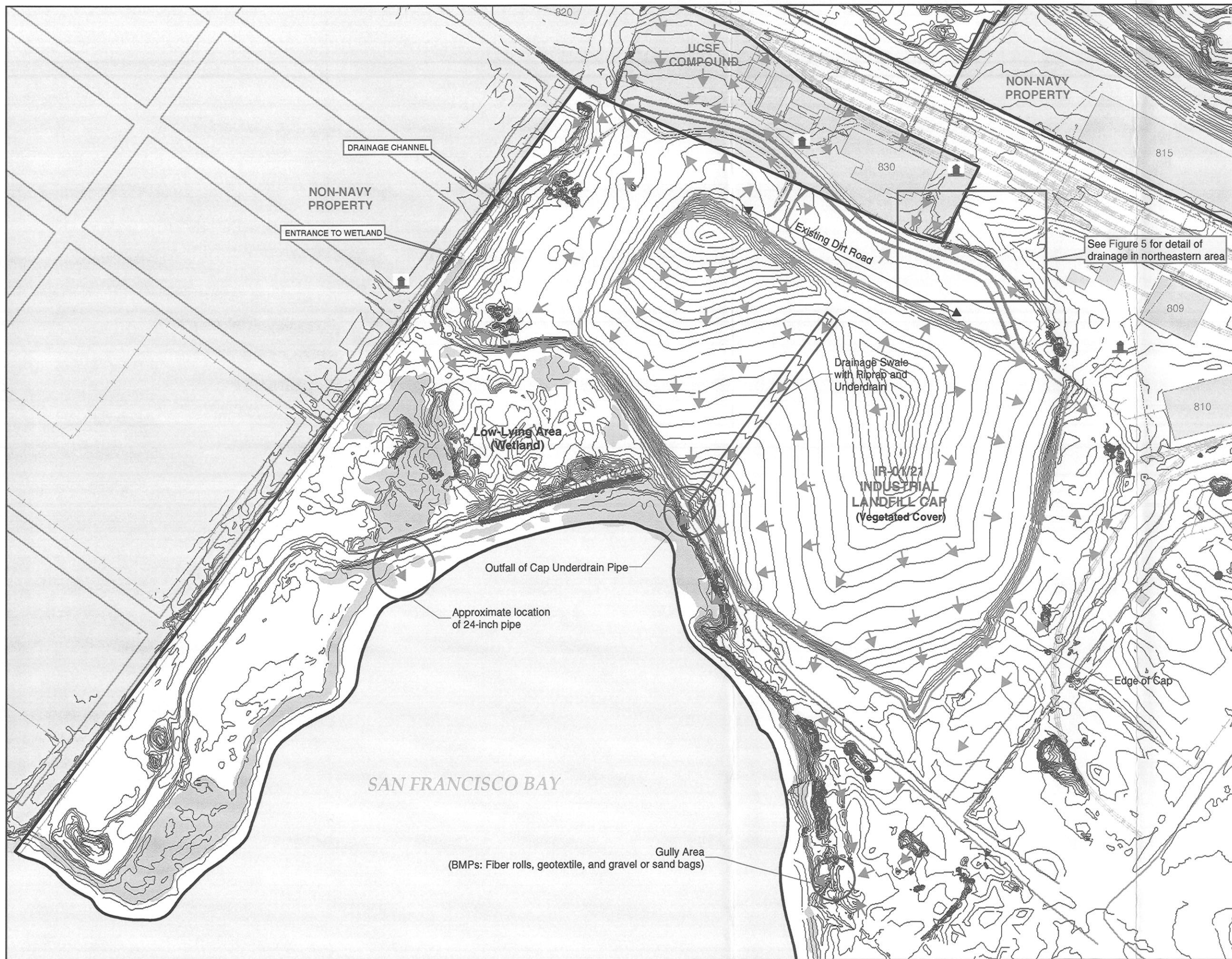
- Installation Restoration Site 01/21 (IR-01/21)
- Building
- Road
- Fence
- Limit of Landfill Cap
- Parcel Boundary
- Non-Navy Property
- University of California, San Francisco (UCSF) Compound

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FIGURE 3 LOCATION MAP

Final Storm Water Discharge Management Plan
IR-01/21 Industrial Landfill, Parcel E



Location Map

- ← Surface Flow Direction
- Fiber Roll
- Limit of Landfill Cap
- Wetland Area Surveyed in October 2001
- ⬮ Fire Hydrant
- Utility Line
- Ground Surface Elevation (1-foot interval)
- Fence
- Ditch Northwest of Cap
- Gravel Road
- Road
- Rail Line
- Building
- Parcel Boundary
- University of California, San Francisco (UCSF) Compound
- Non-Navy Property

Notes:
 BMP Best management practice
 IR Installation restoration



200 0 200
 Scale in Feet

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FIGURE 4 **DRAINAGE PATTERNS AND** **BMPs AT IR-01/21**

Final Storm Water Discharge Management Plan
 IR-01/21 Industrial Landfill, Parcel E

south and southwest from the landfill cap toward the Bay. Near the shoreline, the ground surface slopes steeply down to the intertidal zone. This slope is covered with riprap and is vegetated with shrubs and herbaceous plants. The only source of storm water in this area is rain that falls on the area.

4.2.3 Historical and Current Land Uses

From 1958 to 1974, the Navy operated HPS as a ship repair and maintenance facility; the Navy deactivated HPS in 1974. From 1976 to 1986, the Navy leased HPS to a private ship repair company, Triple A Machine Shop. In 1986, Triple A Machine Shop ceased operations at HPS, and the Navy resumed occupancy of HPS. In 1991, HPS was slated for closure under the Defense Base Closure and Realignment Act of 1990. The shipyard was then divided into Parcels A through F to facilitate environmental investigation and cleanup.

The landfill at IR-01/21 is in an industrial area, and no residences are in this area of Parcel E. The area was filled with artificial fill beginning in the 1940s, after which it was predominantly used to dispose of shipyard wastes. The landfill has been inactive since 1974 and was capped at that time with clean fill.

In March 2001, a portion of the landfill was recapped with a multilayer interim cover system as the result of a brush fire on the existing cap in August 2000. Heat from the brush fire caused some subsurface smoldering. An interim cap was placed over the landfill to cut off the oxygen supply. As a result, any smoldering was effectively smothered. No evidence exists that the buried landfill materials were ignited by the brushfire. During a nonstandard data gaps investigation conducted in the spring of 2002, as part of the additional tasks identified during the remedial investigation to fill data gaps, landfill gas was found to be migrating off site onto the UCSF compound north of the landfill (Tetra Tech 2002b). In October 2002, the Navy constructed a landfill gas control system to reduce landfill gas concentrations found below the UCSF compound and to stop future migration of landfill gas to the UCSF compound. During installation of the gas control system, several drainage improvements were made in the area north of the multilayer cap.

4.2.4 Industrial Facilities Descriptions

The industrial facility categories at or adjacent to IR-01/21 are as follows:

- Materials storage
- Repair and maintenance (general)

The storm water discharges from these surrounding industrial facilities are discussed under the basewide SWDMP.

4.3 INSTALLATION RESTORATION SITE 01/21 STORM WATER POLLUTION PREVENTION PLAN

The General Permit requires that the SWDMP include descriptions of potential pollutant sources and potential pollutants. This section provides a detailed discussion of the potential pollutant sources and potential pollutants at IR01/21.

4.3.1 Material Loading, Unloading, and Access Areas

IR-01/21 contains the following primary material loading and unloading and access areas:

- **Material Loading and Unloading Areas:** There is no loading or unloading of materials at IR-01/21. Material loading and unloading occurs at surrounding facilities, which have been designated loading areas; these areas are described in the basewide SWPPP.
- **Entrances and Exits to HPS:** HPS can be accessed (1) at all times from the main security gate located in the northwestern portion of the base, just south of Parcel B, and (2) only with the consent of the Caretaker Site Office from the locked gate located at the northern end of Parcel E along Crisp Avenue. IR-01/21 can be accessed from a locked gated located at the intersection of Crisp Avenue, Spear Street, and 1st Street. Access points at HPS include ship berthing areas and vehicle access gates.

4.3.2 Methods of On-Site Storage and Disposal of Significant Materials

There is no on-site storage or disposal of significant materials (see definition in Section 4.3.5) at IR-01/21.

4.3.3 Outdoor Activities

Regularly scheduled outdoor activities that occur at IR-01/21 include sampling and inspections.

4.3.4 Authorized Non-Storm Water Discharges

The General Permit authorizes the following non-storm water discharges under specific conditions:

- Fire hydrant flushing
- Potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems
- Drinking fountain water
- Atmospheric condensates, including refrigeration, air conditioning, and compressor condensate
- Irrigation drainage
- Landscape watering
- Springs
- Groundwater
- Foundation or footing drainage
- Seawater infiltration where the sea water is discharged back to its source

No industrial processes associated with the landfill are being conducted at IR-01/21. The only potential discharge of non-storm water is landscape water to maintain vegetative cover on the landfill cap. A NSDEPP is presented in Section 3.0 of this plan.

Authorized non-storm water discharges that have a significant potential to contact pollutants and enter the storm sewer system were not identified at IR-01/21. The following sections identify authorized non-storm water discharge sources with little potential to contact pollutants.

4.3.4.1 *Landscape Irrigation*

Landscape irrigation of the Industrial Landfill cap is performed as part of the maintenance of the vegetative cover. The importance of the vegetative cover is to protect against erosion.

Potential Pollutant Source. Little risk exists for irrigation water to come in contact with contaminated materials or equipment because no industrial activities currently occur at this site and runoff will not flow through outside areas that have industrial operations or significant materials. However, vegetation, loose soil, and gravel have the potential to be carried into the storm drain system by the discharge.

BMPs. The following BMPs will be practiced during landscape watering activities required under the O&M plan for the Industrial Landfill (Tetra Tech 2003):

- Limiting excessive watering; water delivery rates should not exceed the infiltration rate of the soil
- Adjusting irrigation controls to seasonal needs
- Maintaining sprinkler equipment in good working condition and repairing water leaks promptly; inspections of the sprinkler system are being conducted on a quarterly basis under the O&M plan for the landfill cap (Tetra Tech 2003)

4.3.5 Significant Materials Inventory

The General Permit requires a description of significant materials that have been handled and stored at the site. The General Permit defines the term “significant materials” as the following:

“Significant Materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.”

In addition, the General Permit defines the term “significant quantities” as follows:

“Significant Quantities is the volume, concentrations, or mass of a pollutant that can cause or threaten to cause pollution, contamination, or nuisance; adversely impact human health or the environment; and/or cause or contribute to a violation of any applicable water quality standards for the receiving water.”

No significant material is located at IR-01/21. Therefore, no significant material is likely to be present in storm water discharge in significant quantities.

4.3.6 Best Management Practices

BMPs are implemented to reduce the potential for pollution associated with storm water runoff. Many Navy programs, including those incorporated into this SWDMP by reference, have management practices that control pollutants and add to the effectiveness of the storm water program. The General Permit requires that the SWPPP provide a narrative description of the BMPs to be implemented for each potential pollutant and its source. The BMPs presented in this section are applicable to all pollutants and sources identified at the Activity.

BMPs are divided into two categories, nonstructural BMPs and structural BMPs. Nonstructural BMPs are policies, practices, or procedures that reduce or prevent pollutants in storm water

runoff. They are considered low technology, cost-effective measures. Structural BMPs generally consist of structural devices that reduce or prevent pollutants in storm water runoff.

Nonstructural BMPs include the following:

- Good housekeeping
- Preventive maintenance
- Employee training on storm water pollution prevention
- Record keeping and reporting
- Erosion control and site stabilization
- Inspection
- QA/QC programs

Structural BMPs include the following:

- Erosion and sediment control devices
- Storm water runoff control devices
- Storm water treatment

Since no industrial processes or activities occur at IR-01/21, specific BMPs are limited to those that address erosion and sediment controls. These BMPs are discussed in Section 4.3.8.

Narrative descriptions of more than 100 BMPs for military facilities are provided in Appendix J of the basewide SWPPP (LawCrandall 2001). Some of these BMPs are currently being implemented at the Activity through the basewide SWPPP; others will be employed with implementation of this SWPPP. Each BMP has been assigned a number or letter for ease of reference.

4.3.7 Storm Water Pollution Prevention Personnel

The General Permit requires the identification of specific personnel to oversee the development, implementation, and revision of the SWPPP and the specific personnel responsible for conducting all monitoring program activities. The Water Program Manager for SWDIV is responsible for the oversight of the SWDMP. The responsibilities include the following:

- **Personnel Trainer:** Prepares training documents and materials as well as schedules, coordinates, and conducts training sessions.
- **Site Inspector:** Conducts annual comprehensive site compliance evaluations and prepares associated documentation.
- **Record Keeper:** Archives all documents associated with the SWPPP and MRPP, including site maps, inspection reports, maintenance records, and annual reports.
- **Monitoring Coordinator:** Collects and evaluates storm water samples, performs visual observations, and prepares the annual report for submittal to the RWQCB.

4.3.8 Erosion and Sediment Controls

IR-01/21 is unpaved and does not contain any buildings. Except for the landfill cap, the topography of the site is a gentle slope toward the southwest, south, and southeast. Steeper slopes exist at the edge of the cap. The cap has a sprinkler system that provides landscape irrigation. Figure 4 shows the potential sediment sources and the associated BMPs at the site.

Potential Pollutant Sources. Based on site observations and the topography of IR-01/21, storm water will primarily travel across the site toward the Bay. Some storm runoff north of the cap will travel toward a catch basin located near the Parcel E fence, southeast of the UCSF compound. Storm water may cause surface soil erosion in unpaved areas. Vegetation, loose soil, and gravel may be carried into the storm drain system or the Bay by storm water flow. In addition, authorized non-storm water discharges from landscape irrigation of the cap could cause erosion and carry sediment into the storm drain system or the Bay.

BMPs. General site inspections and vegetative cover inspections are conducted on a quarterly and semi-annual basis, respectively, under the O&M plan for the Industrial Landfill (Tetra Tech 2003). After each site inspection, necessary erosion control measures will be recommended and implemented.

Specific BMPs that apply to erosion and sediment control include:

- Revegetate barren areas to prevent soil erosion, cover large areas (defined as greater than 20 square feet in the O&M plan [Tetra Tech 2003]) of exposed soil to keep it from washing away, plant vegetation, apply mulch, or use erosion-control fabric
- Prohibit planting fruit or vegetable plants at hazardous waste sites (signs must be posted in applicable areas)

The following specific BMPs were implemented during preparation of this SWPPP:

- **Vegetation of areas of exposed soil.** Erosion potential exists in areas north and northwest of the cap because of recent construction activities associated with the landfill gas control system. The Navy has seeded large areas (greater than 20 square feet) of exposed soil north and west of the cap. In addition, the Navy has seeded the drainage ditch located northwest of the cap, which was installed during construction of the landfill gas control system. Erosion control matting was also installed in the ditches to assist in growing vegetation in concentrated flow areas. Vegetation is well established across the site as a result of seeding.
- **Installation of an underground drainage pipe and a catch basin.** Storm water previously drained from a large parking area located on the UCSF compound onto the landfill area. The Navy installed an underground drainage system to prevent the flow of storm water from the UCSF compound parking area onto unpaved areas near the landfill. This system also drains a small area north of the landfill cap. The system consists of two catch basins and a 112-foot-long, 12-inch-diameter buried polyvinyl chloride pipe that directs storm water runoff into an existing storm sewer system that discharges at Outfall 033 (Figure 5).

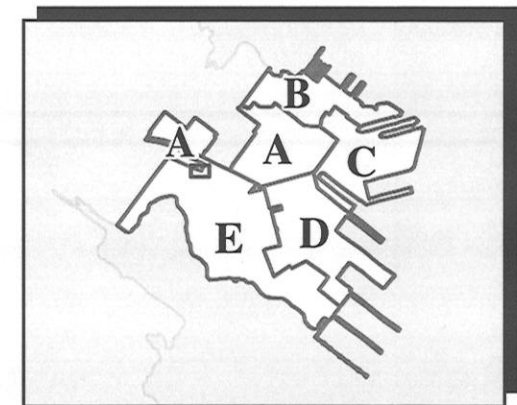
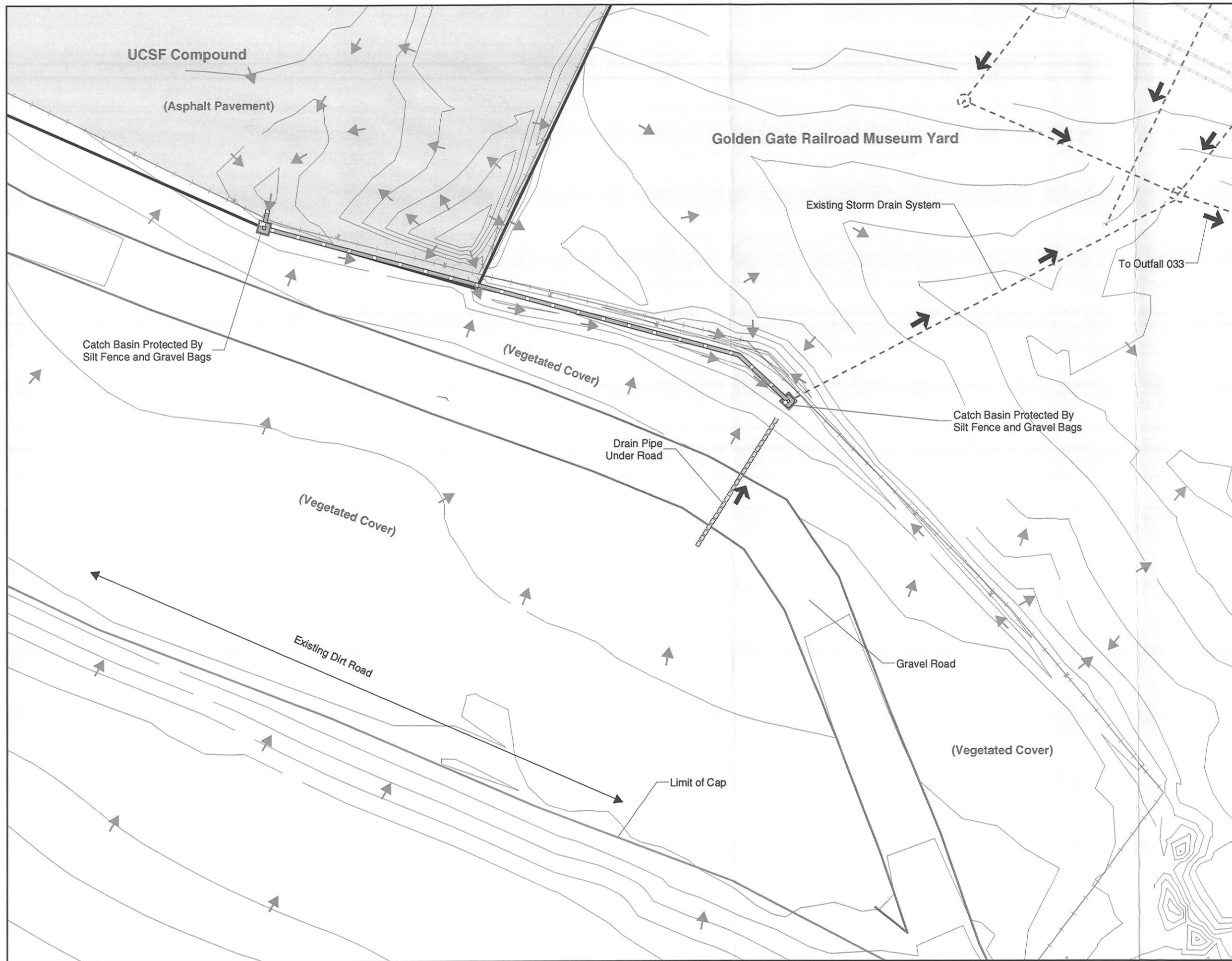
The two catch basins will be fed by the following sources of storm water:

- Flow from the UCSF parking area
- Surface drainage from a swale along the northeastern fence line into the catch basin. The swale collects the northeasterly flow of storm water from a small area north of the landfill cap.

In addition, the Navy has installed gravel bags and a 4-by-4-foot square silt fence around the catch basin as a temporary sediment control measure while vegetation in the area is being established. Appendix M describes the silt fence.

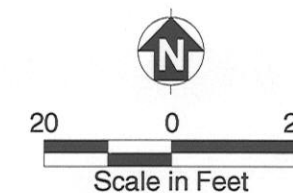
- **Installation of gravel roads.** Gravel roads will replace existing dirt roads adjacent to the cap and in expected high-traffic areas. The Navy will install about 4,500 feet of gravel road before the 2003 to 2004 wet season begins.
- **Design and construction of a sedimentation basin.** Storm water flow from south and southeast of the cap channelizes just before entering the Bay. A gully has been created at a low point south of the cap near the shoreline. No industrial activities occur in this area; however, a dirt road used for monitoring activities and poor soil conditions may inhibit the growth of vegetation. The Navy installed geotextile; gravel bags; and two rows of 120-foot long, 12-inch-diameter fiber rolls with upturned edges parallel to the tidal zone as a temporary control measure. The Navy will improve this BMP by installing a sedimentation basin in the area before the 2003 to 2004 wet season begins. The sedimentation basin will consist of an earthen dike, a restricted outflow structure, and vegetated slopes. The Navy will provide the RWQCB with further details and conceptual drawings before work begins.

The BMPs presented in Section 4.3.6 will also be used to minimize the potential for soil erosion and sediment transport during authorized non-storm water discharges.



Location Map

- ← Pipe Flow Direction
- ← Surface Flow Direction
- Underground Drain Pipe
- Silt Fence and Gravel Bag
- Limit of Landfill Cap
- Ground Surface Elevation (1-foot interval)
- Storm Line
- + Fence
- Gravel Road
- Parcel Boundary
- Rail Line
- University of California, San Francisco (UCSF) Compound



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FIGURE 5
DRAINAGE SYSTEM FOR
NORTHEASTERN AREA OF IR-01/21
Final Storm Water Discharge Management Plan
IR-01/21 Industrial Landfill, Parcel E

4.4

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION

The annual comprehensive site compliance evaluation report assesses whether elements of the SWPPP meet the conditions of the General Permit. The General Permit provides the following guidelines for conducting the annual comprehensive site compliance evaluation:

“The facility operator shall conduct one comprehensive site compliance evaluation (evaluation) in each reporting period (July 1–June 30). Evaluations shall be conducted within 8–16 months of each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 90 days of the evaluation. Evaluations shall include the following:

“a. A review of all visual observation records, inspection records, and sampling and analysis results.

“b. A visual inspection of all potential pollutant sources for evidence of, or potential for, pollutants entering the drainage system.

“c. A review and evaluation of all BMPs (both structural and nonstructural) to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed. A visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, shall be included.

“d. An evaluation report that includes, (i) identification of personnel performing the evaluation, (ii) the date(s) of the evaluation, (iii) necessary SWPPP revisions, (iv) schedule as required in Section A.10.e, for implementing SWPPP revisions, (v) any incidents of noncompliance and the corrective actions taken, and (vi) a certification that the facility operator is in compliance with this General Permit. If the above certification cannot be provided, explain in the evaluation report why the facility operator is not in compliance with this General Permit. The evaluation report shall be submitted as part of the annual report, retained for at least five years, and signed and certified in accordance with Standard Provisions 9. and 10. of Section C. of this General Permit.”

The annual comprehensive site compliance evaluation report must be signed by the Commanding Officer at HPS or the duly authorized representative and be included in the report.

The annual comprehensive site compliance evaluation will be conducted in three phases as described below.

- Phase 1 – Review Visual Observation Records and Analytical Results. Visual observations and analytical results obtained during the past monitoring year will be reviewed to identify any activities that may be affecting storm water runoff. The evaluation will be performed on all data available before the annual comprehensive site compliance evaluation. A prioritized list of activities will be developed to identify areas of primary focus.
- Phase 2 – Visually Inspect Site for BMP Implementation. All of IR-01/21 will be visually inspected, although the field effort should focus on activities identified in Phase 1. The inspection will evaluate whether conditions have changed that directly contribute to storm water pollution. The inspection will also determine whether the BMPs are adequate and properly implemented and maintained and whether additional BMPs are needed. Inspections will be conducted not less than 8 months after the date of the previous annual comprehensive site compliance evaluation. The inspector will determine the status of BMP implementation and effectiveness and identify whether BMPs are no longer applicable. The annual comprehensive site compliance evaluation is intended to be an independent check of progress toward implementing the SWPPP and, as such, should proceed with as little notification as possible. Specific instructions for performing the annual comprehensive site compliance evaluation are provided in Appendix K. The annual facility inspection forms in Appendix K will be generated for each facility addressed in the SWPPP. BMPs from the SWPPP will be highlighted on the form to ensure the inspection of all applicable BMPs.
- Phase 3 – Prepare an Evaluation Report. The annual comprehensive site compliance evaluation is submitted as a part of the annual report. The summary will identify personnel who performed the comprehensive site compliance evaluation and will also identify areas of the SWPPP requiring revision, present a schedule for implementing SWPPP revisions, and identify any incidents of noncompliance with the General Permit (Appendix L).

4.5 PERSONNEL TRAINING

The General Permit requires that the SWPPP include training for personnel who are responsible for (1) implementing activities identified in the SWPPP; (2) conducting inspections, sampling, and visual observations; and (3) managing storm water.

4.5.1 Basewide Training

Effective management of storm water pollutants requires all personnel to be alert to those conditions that may cause pollution. Furthermore, proper day-to-day use of storm water BMPs by all personnel responsible for implementing the SWPPP is essential for the success of the SWPPP.

Storm water pollution prevention personnel are responsible for ensuring that personnel at HPS understand the relationship between industrial operations and storm water quality, the components of the SWPPP, how it will be implemented, and their role in contributing to the effectiveness of the storm water control measures. Personnel training can be integrated with the existing environmental and safety training program at HPS.

At a minimum, the SWPPP training will be conducted annually. The personnel trainer discusses sections of the SWPPP with operations personnel at the Activity (Section 4.3.7). The SWPPP information is also reviewed with new personnel during normal orientation training. The following subjects are addressed in the training program:

- Efficient use of products
- Housekeeping and other source controls
- Management practices other than source controls
- SWPPP requirements

Storm water pollution prevention personnel provide regular feedback about implementation and maintenance of storm water BMPs to HPS personnel. In addition, they evaluate the effectiveness of the training program annually and make improvements, as necessary, to promote personnel awareness and accountability.

As an educational measure, signs are posted in appropriate locations describing cleanup and reporting procedures. Also, storm drains leading to the municipal storm drain system or receiving water will be labeled to prevent improper waste disposal.

4.5.2 Facility-Specific Training

Personnel awareness of the relationship between their daily activities and storm water pollution is essential to improving the quality of storm water discharged from the facility. Furthermore, proper day-to-day use of the BMPs by all personnel is essential for the success of the SWPPP.

Personnel at many industrial facilities have weekly or monthly health and safety meetings where site-specific information is discussed that pertains to spill response and pollution prevention. Each facility maintains a copy of the applicable sections of this plan, and all appropriate personnel are required to read, understand, and implement its contents.

5.0 MONITORING AND REPORTING PROGRAM PLAN

This section discusses how this SWDMP meets the General Permit's requirements for an MRPP.

5.1 INTRODUCTION

The MRPP has the following four components: (1) storm water sampling and analysis, (2) non-storm water discharge visual observations, (3) storm water discharge visual observations, and (4) guidance for collecting and maintaining records and reporting the program results to the RWQCB.

5.1.1 Program Objectives

The General Permit describes the objective of a monitoring program as follows (General Permit, Section B.2)

- Ensure that storm water discharges comply with the discharge prohibitions, effluent limitations, and receiving water limitations specified in the General Permit. The monitoring provisions of the General Permit are intended to conform to existing discharge prohibitions, numeric and narrative effluent limitations, and any applicable water quality standards for receiving waters. Dischargers of industrial activities that are subject to numeric storm water effluent guidelines must sample for all applicable pollutants identified in 40 CFR Subchapter N and must collect additional data. The General Permit requires that facilities comply with 10 specific categories of industrial activities with numeric effluent limitations that are specified in 40 CFR Subchapter N. At this time, IR-01/21 has no activities that are subject to numeric effluent limitations. If activities subject to 40 CFR Subchapter N occur at IR-01/21, then the discharges associated with these activities would have storm water discharges subject to numeric effluent limitations.
- Ensure practices at the Activity to reduce or prevent pollutants in storm water discharges and non-storm water discharges are evaluated and revised to meet changing conditions. The monitoring program is intended to provide information that can be used to reflect changes in storm water discharges that may result from a change in activities, operational procedures, or materials handled. The annual comprehensive site compliance evaluation and the associated BMP and SWPPP revisions are designed to meet this requirement.

- Aid in the implementation and revision of the SWPPP required by the General Permit. The monitoring program has three major components that are intended to aid in the implementation of the SWPPP: (1) non-storm water discharge visual observations, (2) storm water discharge visual observations, and (3) sampling and analysis. Non-storm water discharge visual observations are intended to (1) eliminate unauthorized non-storm water discharges and (2) reduce or prevent pollutants from contacting authorized non-storm water discharges. Storm water discharge visual observations and storm water sampling and analysis are intended to provide an objective measurement of storm water quality. As storm water quality data are accumulated and assessed, the SWPPP may be modified to reflect these data.
- Measure the effectiveness of BMPs to prevent or reduce pollutants in storm water discharges and authorized non-storm water discharges. The SWPPP requires implementation of BMPs that are selected on a site-specific basis to reduce or prevent pollutants from contacting storm water or authorized non-storm water discharges. Visual and analytical monitoring provides a means of evaluating the effectiveness of the selected BMPs. Information gained from analytical data and visual observations may result in modification of selected BMPs or identification of different BMPs.

5.1.2 Information Sources

The information sources used in the preparation of the MRPP include the following:

- “Presumptive Remedy for CERCLA Municipal Landfill Sites” (EPA 1993)
- Field observations
- “Storm Water Pollution Prevention Plan, Hunters Point Annex, San Francisco, California” (PRC and Montgomery Watson 1994)

5.2 STORM WATER SAMPLING AND ANALYSIS

This section describes the requirements and methods for storm water sampling. Appendix G contains the field sampling protocol. Health and safety issues are discussed in the HPS basewide health and safety plan (Tetra Tech 2002a). QA/QC procedures, such as detection limits, container types holding times, and method recoveries related to sampling and analysis, are described in detail in the QA/QC plan (Appendix I).

5.2.1 Industrial Outfalls and Sampling Locations

The General Permit (Sections B.5 and B.7) requires that samples be collected from all drainage areas that represent the quality and quantity of the site’s storm water discharges. Storm water at IR-01/2 flows mainly toward the Bay through low-lying wetlands or vegetated areas. The main drainage pathways are (1) through the central riprap drainage swale and underdrain system on the landfill cap, (2) along drainage channels toward the low-lying wetland area west of the cap

that slowly drains to the Bay, (3) through two catch basins located north of the cap that connect to an existing storm water system, and (4) through a low point located southeast of the cap in the gully area. The existing storm sewer system discharges to the Bay at Outfall 033 located at the southeastern tip of Parcel E.

The following four locations at IR-01/21 were selected as representative storm water sampling locations:

- Entrance of the wetland area west of the cap
- Catch basin north of the cap and east of the UCSF compound
- Catch basin near the pipe inlet to the underground storm drain for the UCSF compound
- Sedimentation basin (inlet and outlet), during discharges only

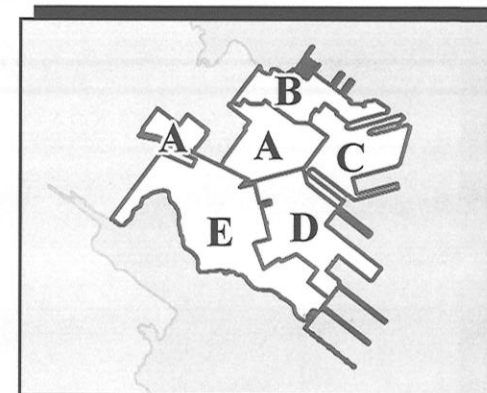
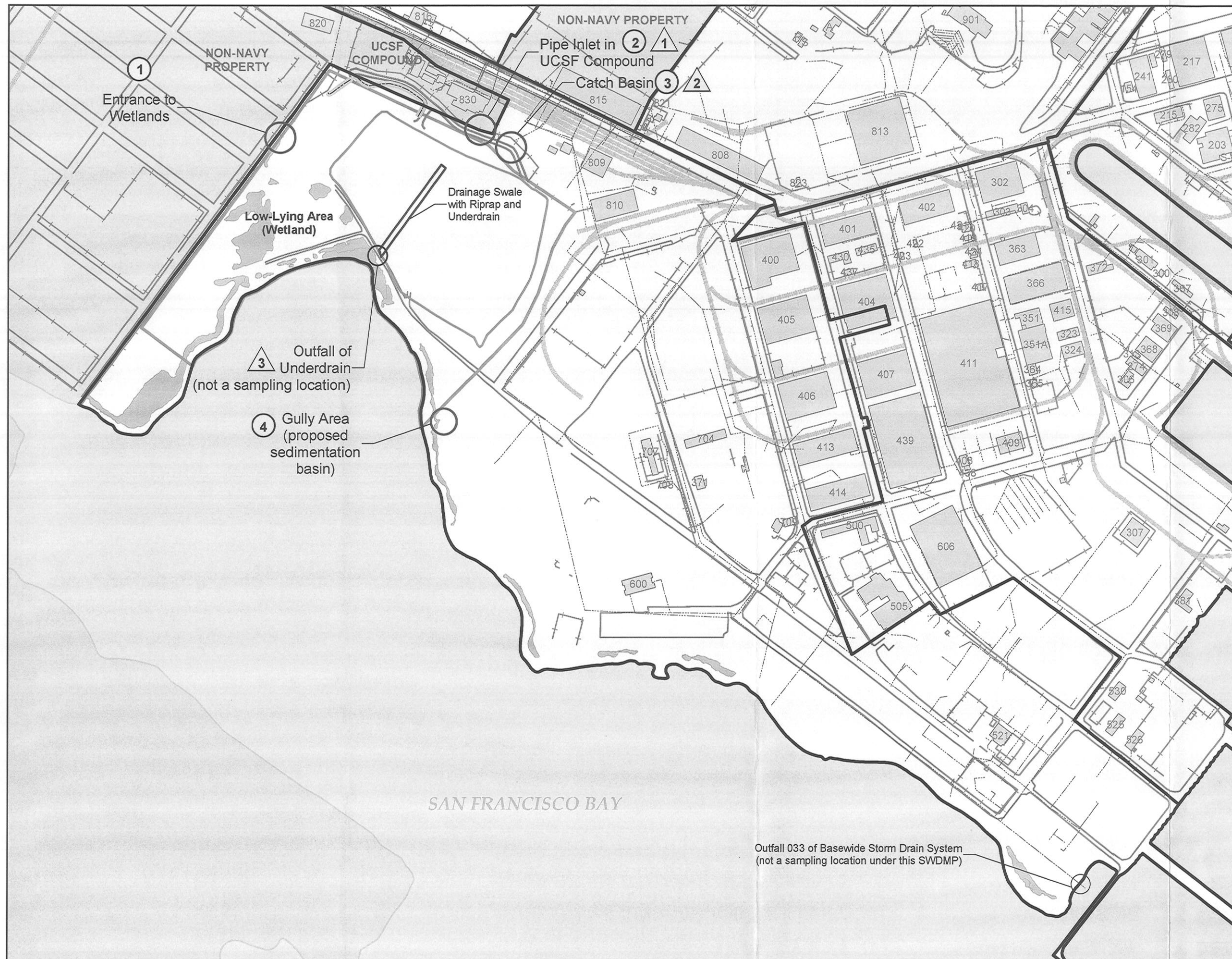
Figure 6 shows these sampling locations. The area of these locations consists primarily of shallow grassy slopes and swales. The locations listed above are representative of storm water flow over these areas. The outfall at the sedimentation basin is representative of an area that may not contain sufficient vegetation to prevent sediment transport, which is necessary to ensure the effectiveness of the basin. The outfall from the center of the cap is not representative of normal flows because the cap underdrain system greatly retards flow and filters out any sediment.

5.2.2 Analytical Parameters

The General Permit requires that storm water samples be analyzed for four routine parameters, toxic pollutant parameters likely to be present in storm water discharges in significant quantities, and other analytical parameters listed in Table D of the General Permit (Section B.5.c). Parameters listed in Table D are dependent on the facility's standard industrial classification code. Since there are no industrial activities associated with IR-01/21, these analytical parameters do not apply.

Benchmark analytical values for each storm water analyte are used to evaluate the significance of the analytical results. A benchmark establishes a level below which analytical results are considered "insignificant." An important provision of the General Permit is that analytes (other than the routine parameters) can be eliminated from subsequent sampling programs following two consecutive "insignificant" results, or two consecutive results below the benchmark.

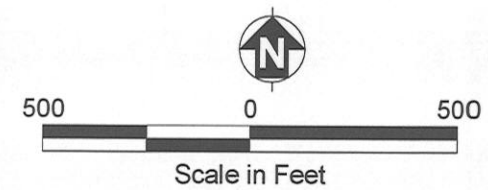
Currently, there is no one comprehensive regulatory list of storm water quality goals that can be used to classify analytical results for storm water as "insignificant" or to evaluate whether concentrations of analytes in storm water could "cause or contribute to an exceedance of a receiving water limitation." Therefore, the Navy has combined water quality goals from the sources listed below to develop a complete set of analyte benchmarks for analytical comparison



Location Map

- ① Storm Water Discharge Visual Observation and Sampling Location Number (location noted by bold red circle)
- △ Non-Storm Water Discharge Visual Observation Location Number
- Limit of Landfill Cap
- Wetland Surveyed in October 2001
- Gravel Road
- Ditch Northwest of Cap
- Utility Line
- Fence
- Rail Line
- Road
- Building
- Installation Restoration Site 01/21
- Parcel Boundary
- University of California, San Francisco (UCSF) Compound
- Non-Navy Property

Note:
SWDMP Storm Water Discharge Management Plan



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FIGURE 6
SAMPLING AND VISUAL
OBSERVATION LOCATIONS
Final Storm Water Discharge Management Plan
IR-01/21 Industrial Landfill, Parcel E

purposes. The sources are listed in order of their priority to aid in establishing the most appropriate water quality goal:

- EPA. 2000a. "Numeric Criteria for Priority Toxic Pollutants for the State of California, California Toxics Rule." Title 65 *Federal Register* (FR), Sections 31682-31719. May 18.
- SWRCB. 2001. "Water Quality Control Plan for Ocean Waters of California (California Ocean Plan)." December 3.
- EPA. 2000b. "National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for Industrial Activities." Title 65 FR, Section 64746. Final Reissuance. October 30.
- EPA. Various Dates. "National Recommended Ambient Water Quality Criteria – Saltwater or Freshwater Aquatic Life Protection, Ambient Water Quality Criteria."
- EPA. 1993. "Integrated Risk Information System (IRIS) Reference Dose (RfD) as a Drinking Water Level."
- California Department of Health Services. EPA. 1991. "Drinking Water Standards, Maximum Contaminant Levels – California." Title 22 *California Code of Regulations*, Division 4, Chapter 15. Domestic Water Quality and Monitoring.
- EPA. 2002. "Drinking Water Standards, Maximum Contaminant Levels – Federal." 40 CFR, Parts 141 and 143.

Where the above sources do not have a water quality goal for an analyte, the laboratory's method detection limit (MDL) was used.

Outfalls were assigned to the receiving water body into which they discharge to identify the most appropriate benchmark from either the California Toxics Rule or the California Ocean Plan. The water quality goal from the California Toxics Rule was used as the analytical benchmark at outfalls that discharge into a saltwater-enclosed bay or estuary or into freshwater-receiving water. The water quality goal from the California Ocean Plan was used as the analytical benchmark at outfalls that discharge into the Pacific Ocean. When an analyte did not have a water quality goal from either the California Toxics Rule or the California Ocean Plan, the water quality goal from the Multi-Sector General Permit was used as the analytical benchmark. For analytes with water quality goals from both the California Toxics Rule and Multi-Sector General Permit, the lower of the two values was used as the analytical benchmark. For analytes with water quality goals from both the California Ocean Plan and Multi-Sector General Permit, the lower of the two values was used as the analytical benchmark. For analytes with no water quality goal listed for the California Toxics Rule, the California Ocean Plan, or the Multi-Sector General Permit, a benchmark was selected in order of priority from the list above. In cases where an analyte has no published water quality goal, the laboratory's MDL was used as the analytical benchmark.

The General Permit prohibits storm water discharges that “cause or contribute to an exceedance of a receiving water limitation.” The benchmark values described above will be used as a metric for discharge evaluation. The benchmark values should not be used to evaluate compliance at HPS. Table 1 lists the analytical results to be used during the annual comprehensive evaluation of site compliance to investigate possible sources of pollutants and evaluate the effectiveness of BMPs in place at the site.

5.2.2.1 *Routine Parameters*

Storm water samples will be analyzed for the four routine parameters listed in Table 2.

5.2.2.2 *Toxic Pollutant Parameters*

Storm water samples will be analyzed for three toxic parameters that may be present in storm water discharge in significant quantities (Table 3).

5.2.3 *Sampling Schedule*

This section discusses the schedule for storm water sampling and the procedures for reduction of sampling frequency.

5.2.3.1 *Routine Parameters*

Each year, the Navy will collect storm water samples at each of the drainage locations identified in Section 5.2.1. Samples will be collected during the first hour of discharge from (1) the first storm event of the wet season and (2) at least one other storm event during the wet season. The General Permit defines the wet season as the period from October 1 through May 31. Storm water samples will be analyzed for the parameters listed in Tables 2 and 3.

5.2.3.2 *Sampling and Analysis Reduction*

The Navy may reduce the number of storm water samples required for the remaining term of the General Permit, if certification of the following conditions is made:

- Samples have been collected during at least six storm events from all required drainage areas
- All prohibited non-storm water discharges have been eliminated or otherwise permitted
- The Navy demonstrates compliance with the terms and conditions of the General Permit for the previous 2 years
- The Navy demonstrates that the facility’s storm water discharges and authorized non-storm water discharges do not contain significant quantities of pollutants

TABLE 1: WATER QUALITY CRITERIA FOR ANALYTICAL RESULTS
Final Storm Water Discharge Management Plan, IR-01/21, Parcel E, Hunters Point Shipyard, San Francisco, California

Analyte ^a	Benchmarks				Water Quality Criteria									
					California Toxics Rule		California Ocean Plan Consumption of Aquatic Organisms Only (2)		USEPA Ambient Criteria		EPA IRIS Reference Dose as a Drinking Water Level (5) California Drinking Water Standard (6) EPA Drinking Water Standard (7) Lab. MDL (8)			
	Enclosed Bay and Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Fresh Water)	RWQCB NPDES Storm Water Permit	Saltwater Consumption of Aquatic Organisms Only (1A)	Freshwater Consumption of Aquatic Organisms Only (1B)			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)				
Semivolatile Organic Compounds														
1-Chloronaphthalene	1.2	1.2	1.2	---	---	---	---	---	---	---	---	---	---	1.2
1-Naphthylamine	4.3	4.3	4.3	---	---	---	---	---	---	---	---	---	---	4.3
1,2,4,5-Tetrachlorobenzene	160	160	250	---	---	---	---	---	160	250	2	---	---	1.0
1,2-Dichlorobenzene (o-DCB)	17,000	5,100 ^b	17,000	---	17,000	17,000	5,100 ^b	---	1,970	1,120	630	600	600	1.4
1,2-Diphenylhydrazine	0.54	0.16	0.54	---	0.54	0.54	0.16	---	---	270	---	---	---	1.1
1,3,5-Trinitrobenzene	210	210	210	---	---	---	---	---	---	---	210	---	---	0.035
1,3-Dichlorobenzene (m-DCB)	2,600	5,100 ^b	2,600	---	2,600	2,600	5,100 ^b	---	1,970	1,120	---	---	---	1.2
1,3-Dinitrobenzene	0.7	0.7	0.7	---	---	---	---	---	---	---	0.7	---	---	0.088
1,4-Dichlorobenzene (p-DCB)	2,600	18	2,600	---	2,600	2,600	18	---	1,970	1,120	---	5	75	0.18
2,3,4,6-Tetrachlorophenol	440	10(IM)	210	---	---	---	10(IM)	---	440	---	210	---	---	1.4
2,4,5-Trichlorophenol	10(IM)	10(IM)	700	---	---	---	10(IM)	---	---	---	700	---	---	1.5
2,4,6-Trichlorophenol	6.5	0.29	6.5	---	6.5	6.5	0.29	---	---	---	---	---	---	1.8
2,4,6-Trinitrotoluene (TNT)	0.35	0.35	0.35	---	---	---	---	---	---	---	0.35	---	---	0.075
2,4-Dichlorophenol	790	10(IM)	790	---	790	790	10(IM)	---	---	2,020	21	---	---	1.7
2,4-Dimethylphenol	2,300	300(IM)	2,300	---	2,300	2,300	300(IM)	---	---	2,120	140	---	---	1.5
2,4-Dinitrophenol	14,000	300(IM)	14,000	---	14,000	14,000	300(IM)	---	4,850	230	14	---	---	6.2
2,4-Dinitrotoluene	9.1	2.6	9.1	---	9.1	9.1	2.6	---	590	330	14	---	---	0.058
2,6-Dichlorophenol	10(IM)	10(IM)	10(IM)	---	---	---	10(IM)	---	---	---	---	---	---	1.3
2,6-Dinitrotoluene	590	590	330	---	---	---	---	---	590	330	---	---	---	1.8
2-Chloronaphthalene	4,300	7.5	4,300	---	4,300	4,300	---	---	7.5	1,600	560	---	---	1.7
2-Chlorophenol (o-Chlorophenol)	400	10(IM)	400	---	400	400	10(IM)	---	---	4,380	35	---	---	1.3
2-Methylnaphthalene	1.5	1.5	1.5	---	---	---	---	---	---	---	---	---	---	1.5
2-Methylphenol (o-Cresol)	300(IM)	300(IM)	35	---	---	---	300(IM)	---	---	---	35	---	---	1.3
2-Naphthylamine	5.3	5.3	5.3	---	---	---	---	---	---	---	---	---	---	5.3
2-Nitroaniline	6.7	6.7	6.7	---	---	---	---	---	---	---	---	---	---	6.7
2-Nitrophenol (o-Nitrophenol)	4,850	300(IM)	230	---	---	---	300(IM)	---	4,850	230	---	---	---	1.5
2-Picoline	1.2	1.2	1.2	---	---	---	---	---	---	---	---	---	---	1.2
3,3'-Dichlorobenzidine	0.077	0.0081	0.077	---	0.077	0.077	0.0081	---	---	---	---	---	---	6.8
3,4-Methylphenol (m/p-Cresol)	300(IM)	300(IM)	35	---	---	---	300(IM)	---	---	---	35	---	---	1.1
3-Methylcholanthrene	1.8	1.8	1.8	---	---	---	---	---	---	---	---	---	---	1.8
3-Methylphenol (m-Cresol)	300(IM)	300(IM)	35	---	---	---	300(IM)	---	---	---	35	---	---	1.8
3-Nitroaniline	4.3	4.3	4.3	---	---	---	---	---	---	---	---	---	---	4.3

TABLE 1: WATER QUALITY CRITERIA FOR ANALYTICAL RESULTS (Continued)
Final Storm Water Discharge Management Plan, IR-01/21, Parcel E, Hunters Point Shipyard, San Francisco, California

Analyte ^a	Benchmarks				Water Quality Criteria									
					California Toxics Rule		California Ocean Plan Consumption of Aquatic Organisms Only (2)		USEPA Ambient Criteria		EPA IRIS Reference Dose as a Drinking Water Level (5) California Drinking Water Standard (6) EPA Drinking Water Standard (7) Lab. MDL (8)			
	Enclosed Bay and Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Fresh Water)	RWQCB NPDES Storm Water Permit	Saltwater Consumption of Aquatic Organisms Only (1A)	Freshwater Consumption of Aquatic Organisms Only (1B)			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)				
Semivolatile Organic Compounds (Continued)														
4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol)	765	300(IM)	765	---	765	765	300(IM)	---	4,850	230	---	---	---	3.4
4-Aminobiphenyl	1.4	1.4	1.4	---	---	---	---	---	---	---	---	---	---	1.4
4-Bromophenyl phenyl ether	360	360	360	---	---	---	---	---	---	360	---	---	---	1.8
4-Chloro-3-methylphenol (4-Chloro-m-cresol)	10(IM)	10(IM)	30	---	---	---	10(IM)	---	---	30	---	---	---	2.3
4-Chloroaniline (p-Chloraniline)	28	28	28	---	---	---	---	---	---	---	28	---	---	5.7
4-Chlorophenyl phenyl ether	1.8	1.8	1.8	---	---	---	---	---	---	---	---	---	---	1.8
4-Nitroaniline (p-Nitroaniline)	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---	---	7.5
4-Nitrophenol (p-Nitrophenol)	4,850	300(IM)	230	---	---	---	300(IM)	---	4,850	230	---	---	---	1.6
7,12-Dimethylbenz(a)anthracene	300	300	300	---	---	---	---	---	300	---	---	---	---	2.1
aa-Dimethylphenylamine	1.2	1.2	1.2	---	---	---	---	---	---	---	---	---	---	1.2
Acenaphthene	2,700	970	2,700	---	2,700	2,700	---	---	970	1,700	420	---	---	1.5
Acenaphthylene	300	0.0088	300	---	---	---	0.0088	---	300	---	---	---	---	0.020
Acetophenone	700	700	700	---	---	---	---	---	---	---	700	---	---	1.4
Aniline	77(1H)	77(1H)	28(1H)	---	---	---	---	---	77(1H)	28(1H)	---	---	---	1.3
Anthracene	110,000	0.0088	110,000	---	110,000	110,000	0.0088	---	300	---	2,100	---	---	0.00028
Benzo(a)anthracene	0.049	0.0088	0.049	---	0.049	0.049	0.0088	---	300	---	---	---	---	0.00078
Benzaldehyde	700	700	700	---	---	---	---	---	---	---	700	---	---	50
Benzidine	0.00054	0.000069	0.00054	---	0.00054	0.00054	0.000069	---	---	2,500	---	---	---	5.1
Benzo(a)pyrene	0.049	0.0088	0.049	---	0.049	0.049	0.0088	---	300	---	---	0.2	0.2	0.00057
Benzo(b)fluoranthene	0.049	0.0088	0.049	---	0.049	0.049	0.0088	---	300	---	---	---	---	0.00037
Benzo(g,h,i)perylene	0.0088	0.0088	0.0088	---	---	---	0.0088	---	300	---	---	---	---	0.014
Benzo(k)fluoranthene	0.049	0.0088	0.049	---	0.049	0.049	0.0088	---	300	---	---	---	---	0.00054
Benzoic acid	28,000	28,000	28,000	---	---	---	---	---	---	---	28,000	---	---	50
Benzyl alcohol	1.4	1.4	1.4	---	---	---	---	---	---	---	---	---	---	1.4
Bis(2-chloroethoxy)methane	4.4	4.4	4.4	---	---	---	4.4	---	---	---	---	---	---	1.4
Bis(2-chloroethyl)ether	1.4	0.045	1.4	---	1.4	1.4	0.045	---	---	238,000	---	---	---	1.1
Bis(2-chloroisopropyl)ether	170,000	1,200	170,000	---	170,000	170,000	1,200	---	---	238,000	280	---	---	1.4
Bis(2-ethylhexyl)phthalate (Di[2-ethylhexyl]phthalate)	5.9	3.5	5.9	---	5.9	5.9	3.5	---	2,944	2,000	---	4	6	1.7
Butylbenzylphthalate (BBP)	3,000 ^g	3,000 ^g	3,000 ^g	---	5,200	5,200	---	3,000 ^g	2,944	940	140	---	---	1.0

TABLE 1: WATER QUALITY CRITERIA FOR ANALYTICAL RESULTS (Continued)
Final Storm Water Discharge Management Plan, IR-01/21, Parcel E, Hunters Point Shipyard, San Francisco, California

Analyte ^a	Benchmarks				Water Quality Criteria									
					California Toxics Rule		California Ocean Plan Consumption of Aquatic Organisms Only (2)		USEPA Ambient Criteria		EPA IRIS Reference Dose as a Drinking Water Level (5) California Drinking Water Standard (6) EPA Drinking Water Standard (7) Lab. MDL (8)			
	Enclosed Bay and Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Fresh Water)	RWQCB NPDES Storm Water Permit	Saltwater Consumption of Aquatic Organisms Only (1A)	Freshwater Consumption of Aquatic Organisms Only (1B)			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)				
Semivolatile Organic Compounds (Continued)														
Chrysene	0.049	0.0088	0.049	---	0.049	0.049	0.0088	---	300	---	---	---	---	0.00036
Dibenz(a,h)anthracene	0.049	0.0088	0.049	---	0.049	0.049	0.0088	---	300	---	---	---	---	0.0023
Dibenz(a,j)acridine	4.1	4.1	4.1	---	---	---	---	---	---	---	---	---	---	4.1
Dibenzofuran	1.7	1.7	1.7	---	---	---	---	---	---	---	---	---	---	1.7
Diethylphthalate (DEP)	120,000	33,000	120,000	---	120,000	120,000	33,000	---	2,944	940	5,600	---	---	1.9
Dimethylphthalate (DMP)	1,000 ^b	1,000 ^b	1,000 ^b	---	2,900,000	2,900,000	820,000	1,000 ^b	2,944	940	---	---	---	1.9
Di-n-butylphthalate (DBP)	12,000	3,500	12,000	---	12,000	12,000	3,500	---	2,944	940	700	---	---	1.7
Di-n-octylphthalate (DOP)	2,944	2,944	940	---	---	---	---	---	2,944	940	---	---	---	1.9
Diphenylamine	180	180	180	---	---	---	---	---	---	---	180	---	---	1.5
Ethyl methanesulfonate	5.7	5.7	5.7	---	---	---	---	---	---	---	---	---	---	5.7
Fluoranthene	42 ^c	15	42 ^c	---	370	370	15	42 ^g	40	3,980	280	---	---	0.017
Fluorene	14,000	0.0088	14,000	---	14,000	14,000	0.0088	---	300	---	280	---	---	0.0069
Hexachlorobenzene	0.00077	0.00021	0.00077	---	0.00077	0.00077	0.00021	---	160	250	---	1	1	0.02
Hexachlorobutadiene (Perchlorobutadiene)	50	14	50	---	50	50	14	---	32	90	---	---	---	0.014
Hexachlorocyclopentadiene	17,000	58	17,000	---	17,000	17,000	58	---	7.0	7.0	42	50	50	3.5
Hexachloroethane	8.9	2.5	8.9	---	8.9	8.9	2.5	---	940	980	0.7	---	---	1.4
Indeno(1,2,3-cd)pyrene	0.049	0.0088	0.049	---	0.049	0.049	0.0088	---	300	---	---	---	---	0.0010
Isophorone	600	730	600	---	600	600	730	---	12,900	117,000	140	---	---	1.4
Methyl methanesulfonate	1.6	1.6	1.6	---	---	---	---	---	---	---	---	---	---	1.6
Naphthalene (Naphtalin)	2,350	2,350	2,300	---	---	---	---	---	2,350	2,300	14	---	---	1.3
Nitrobenzene	1,900	4.9	1,900	---	1,900	1,900	4.9	---	6,680	27,000	3.5	---	---	0.08
N-Nitrosodimethylamine	8.1	7.3	8.1	---	8.1	8.1	7.3	---	3,300,000	5,850	---	---	---	0.80
N-Nitroso-di-n-butylamine	3,300,000	3,300,000	5,850	---	---	---	---	---	3,300,000	5,850	---	---	---	2.4
N-Nitroso-di-n-propylamine	1.4	0.38	1.4	---	1.4	1.4	0.38	---	3,300,000	5,850	---	---	---	1.4
N-Nitrosodiphenylamine	16	2.5	16	---	16	16	2.5	---	3,300,000	5,850	---	---	---	1.8
N-Nitrosopiperidine	1.6	1.6	1.6	---	---	---	---	---	---	---	---	---	---	1.6
p-Dimethylaminoazobenzene (4-Dimethylaminoazobenzene)	1.2	1.2	1.2	---	---	---	---	---	---	---	---	---	---	1.2
Pentachlorophenol (PCP)	13(1H)	10(IM)	19(1H)	---	13(1H)	19(1H)	10(IM)	---	13(1H)	19(1H)	---	1	1	0.07
Phenacetin	1.6	1.6	1.6	---	---	---	---	---	---	---	---	---	---	1.6
Phenanthrene	0.0088	0.0088	0.0088	---	---	---	0.0088	---	300	---	---	---	---	0.0088

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TABLE 1: WATER QUALITY CRITERIA FOR ANALYTICAL RESULTS (Continued)
Final Storm Water Discharge Management Plan, IR-01/21, Parcel E, Hunters Point Shipyard, San Francisco, California

Analyte ^a	Benchmarks				Water Quality Criteria									
					California Toxics Rule		California Ocean Plan Consumption of Aquatic Organisms Only (2)		USEPA Ambient Criteria		EPA IRIS Reference Dose as a Drinking Water Level (5) California Drinking Water Standard (6) EPA Drinking Water Standard (7) Lab. MDL (8)			
	Enclosed Bay and Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Fresh Water)	RWQCB NPDES Storm Water Permit	Saltwater Consumption of Aquatic Organisms Only (1A)	Freshwater Consumption of Aquatic Organisms Only (1B)			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)				
Semivolatile Organic Compounds (Continued)														
Phenol	4,600,000	300(IM)	4,600,000	---	4,600,000	4,600,000	300(IM)	---	5,800	10,200	4,200	---	---	0.70
Pronamide (Kerb)	53	53	53	---	---	---	---	---	---	---	53	---	---	1.5
Pyrene	10 ^d	10 ^d	10 ^d	---	11,000	11,000	0.0088	10 ^d	300	---	210	---	---	0.0025
Toxaphene	0.21(1H)	0.00021	0.73(1H)	---	0.21(1H)	0.73(1H)	0.00021	---	0.21(1H)	0.73(1H)	---	3	3	0.042
Polychlorinated Biphenyls					---	---	---	---	---	---	---	---	---	---
Aroclor-1016 (PCB-1016)	0.127 ^e	0.127 ^e	0.127 ^e	---	---	---	---	0.127 ^e	---	---	---	---	---	0.43
Aroclor-1221 (PCB-1221)	100 ^d	100 ^d	100 ^d	---	---	---	---	100 ^d	---	---	---	---	---	0.64
Aroclor-1232 (PCB-1232)	0.318 ^e	0.318 ^e	0.318 ^e	---	---	---	---	0.318 ^e	---	---	---	---	---	0.16
Aroclor-1242 (PCB-1242)	0.20 ^d	0.200 ^d	0.200 ^d	---	---	---	---	0.200 ^d	---	---	---	---	---	0.31
Aroclor-1248 (PCB-1248)	2.54 ^e	2.54 ^e	2.54 ^e	---	---	---	---	2.54 ^e	---	---	---	---	---	0.11
Aroclor-1254 (PCB-1254)	100 ^d	100 ^d	100 ^d	---	---	---	---	100 ^d	---	---	---	---	---	0.11
Aroclor-1260 (PCB-1260)	0.477 ^e	0.477 ^e	0.477 ^e	---	---	---	---	0.477 ^e	---	---	---	---	---	0.18
Metals ^f														
Aluminum (Al), Total	750 ^g	750 ^g	750 ^g	---	---	---	---	750 ^g	---	750(1H)	---	1,000	50-200 ^g	27
Aluminum (Al), Dissolved	750 ^g	750 ^g	750 ^g	---	---	---	---	750 ^g	---	750(1H)	---	1,000	50-200 ^g	27
Antimony (Sb), Total	636 ^e	636 ^e	636 ^e	---	4,300	4,300	1,200	636 ^e	---	9,000	2.8	6	6	2.1
Antimony (Sb), Dissolved	636 ^e	636 ^e	636 ^e	---	4,300	4,300	1,200	636 ^e	---	9,000	2.8	6	6	2.1
Arsenic (As), Total	69(1H)	80(1M)	340(1H)	---	69(1H)	340(1H)	80(IM)	168 ^e	---	---	2.1	50	50	2.2
Arsenic (As), Dissolved	69(1H)	80(1M)	340(1H)	---	69(1H)	340(1H)	80(IM)	---	69(1H)	340(1H)	---	---	---	2.2
Barium (Ba), Total	490	490	490	---	---	---	---	---	---	---	490	1,000	2,000	1.1
Barium (Ba), Dissolved	490	490	490	---	---	---	---	---	---	---	490	1,000	2,000	1.1
Beryllium (Be), Total	0.033	0.033	130 ^h	---	---	---	0.033	130 ^h	---	130	14	4	4	0.08
Beryllium (Be), Dissolved	0.033	0.033	130 ^h	---	---	---	0.033	130 ^h	---	130	14	4	4	0.08
Cadmium (Cd), Total	15.9 ^e	10(IM)	4.6(1H)	---	44(1H)	4.6(1H)	10(IM)	15.9 ^e	---	---	3.5	5	5	0.38
Cadmium (Cd), Dissolved	15.9 ^e	9.4(IM)	4.3(1H)	---	42(1H)	4.3(1H)	9.4(IM)	---	---	---	---	---	---	0.38
Calcium (Ca), Total	150	150	150	---	---	---	---	---	---	---	---	---	---	150
Calcium (Ca), Dissolved	150	150	150	---	---	---	---	---	---	---	---	---	---	150
Chromium III (CrIII), Total	10,300	190,000	1,738(1H)	---	---	1,738(1H)	190,000	---	10,300	---	10,500	---	---	0.95
Chromium III (CrIII), Dissolved	10,300	190,000	550(1H)	---	---	550(1H)	---	---	---	550(1H)	---	---	---	0.95
Chromium (Cr), Total	20(IM) ^g	20(IM) ^g	20(IM) ^g	---	---	---	20(IM) ^g	---	---	---	---	50	100	0.95
Chromium (Cr), Dissolved	20(IM) ^g	20(IM) ^g	20(IM) ^g	---	---	---	20(IM) ^g	---	---	---	---	50	100	0.95
Copper (Cu), Total	5.8(1H)	30(IM)	13.5(1H)	63.6 ^e	5.8(1H)	13.5(1H)	30(IM)	63.6 ^e	---	---	---	1,300	1,300	1.3
Copper (Cu), Dissolved	4.8(1H)	25(IM)	13(1H)	63.6 ^e	4.8(1H)	13(1H)	25(IM)	63.6 ^e	4.8(1H)	13(1H)	---	---	---	1.3

TABLE 1: WATER QUALITY CRITERIA FOR ANALYTICAL RESULTS (Continued)
Final Storm Water Discharge Management Plan, IR-01/21, Parcel E, Hunters Point Shipyard, San Francisco, California

Analyte ^a	Benchmarks				Water Quality Criteria									
					California Toxics Rule		California Ocean Plan Consumption of Aquatic Organisms Only (2)		USEPA Ambient Criteria		EPA IRIS Reference Dose as a Drinking Water Level (5) California Drinking Water Standard (6) EPA Drinking Water Standard (7) Lab. MDL (8)			
	Enclosed Bay and Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Fresh Water)	RWQCB NPDES Storm Water Permit	Saltwater Consumption of Aquatic Organisms Only (1A)	Freshwater Consumption of Aquatic Organisms Only (1B)			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)				
Metals ^f (Continued)														
Iron (Fe), Total	1,000(IM)	1,000(IM)	1,000(IM)	---	---	---	---	1,000 ⁱ	---	1,000(IM)	---	300 ^g	300 ^g	8.2
Iron (Fe), Dissolved	1,000(IM)	1,000(IM)	1,000(IM)	---	---	---	---	1,000 ⁱ	---	1,000(IM)	---	300 ^g	300 ^g	8.2
Lead (Pb), Total	82 ^g	20(IM)	82(1H)	---	220(1H)	82(1H)	20(IM)	82 ^g	---	---	---	15	15	1.3
Lead (Pb), Dissolved	82 ^g	19(IM)	65(1H)	---	210(1H)	65(1H)	19(IM)	---	210(1H)	65(1H)	---	---	---	1.3
Magnesium (Mg), Total	64 ^e	64 ^e	64 ^e	---	---	---	---	64 ^e	---	---	---	---	---	34
Magnesium (Mg), Dissolved	64 ^e	64 ^e	64 ^e	---	---	---	---	64 ^e	---	---	---	---	---	34
Mercury (Hg), Total	2.1(1H)	0.40(IM)	1.6(1H)	---	2.1(1H)	1.6(1H)	0.40(IM)	2.4 ^g	---	---	---	2	2	0.02
Mercury (Hg), Dissolved	1.8(1H)	0.34(IM)	1.4(1H)	---	1.8(1H)	1.4(1H)	0.34(IM)	---	1.8(1H)	1.4(1H)	---	---	---	0.2
Molybdenum (Mo), Total	35	35	35	---	---	---	---	---	---	---	35	---	---	1.1
Molybdenum (Mo), Dissolved	35	35	35	---	---	---	---	---	---	---	35	---	---	1.1
Nickel (Ni), Total	75(1H)	50(IM)	470(1H)	---	75(1H)	470(1H)	50(IM)	1,417 ^g	---	---	140	100	---	1.2
Nickel (Ni), Dissolved	74(1H)	49(IM)	470(1H)	---	74(1H)	470(1H)	49(IM)	---	74(1H)	470(1H)	---	---	---	1.2
Potassium (K), Total	62	62	62	---	---	---	---	---	---	---	---	---	---	62
Potassium (K), Dissolved	62	62	62	---	---	---	---	---	---	---	---	---	---	62
Rhenium (Re), Total	0.2	0.2	0.2	---	---	---	---	---	---	---	---	---	---	0.2
Rhenium (Re), Dissolved	0.2	0.2	0.2	---	---	---	---	---	---	---	---	---	---	0.2
Selenium (Se), Total	238 ^e	150(IM)	20(1H)	---	290(1H)	20(1H)	150(IM)	238 ^e	---	---	---	50	50	3
Selenium (Se), Dissolved	238 ^e	150(IM)	20(1H)	---	290(1H)	20(1H)	150(IM)	---	290(1H)	20(1H)	---	---	---	3
Silver (Ag), Total	2.2(1H)	7(IM)	4.0(1H)	---	2.2(1H)	4.0(1H)	7(IM)	32 ^e	---	---	35	100	100	1.1
Silver (Ag), Dissolved	1.9(1H)	5.9(IM)	3.4(1H)	---	1.9(1H)	3.4(1H)	5.9(IM)	---	1.9(1H)	3.4(1H)	---	---	---	1.1
Sodium (Na), Total	720	720	720	---	---	---	---	---	---	---	---	---	---	720
Sodium (Na), Dissolved	720	720	720	---	---	---	---	---	---	---	---	---	---	720
Thallium (Tl), Total	6.3	2	6.3	---	6.3	6.3	2	---	2,130	1,400	0.6	2	2	0.98
Thallium (Tl), Dissolved	6.3	2	6.3	---	6.3	6.3	2	---	2,130	1,400	0.6	2	2	0.98
Titanium (Ti), Total	0.42	0.42	0.42	---	---	---	---	---	---	---	---	---	---	0.42
Titanium (Ti), Dissolved	0.42	0.42	0.42	---	---	---	---	---	---	---	---	---	---	0.42
Vanadium (V), Total	63	63	63	---	---	---	---	---	---	---	63	---	---	0.49
Vanadium (V), Dissolved	63	63	63	---	---	---	---	---	---	---	63	---	---	0.49
Zinc (Zn), Total	95(1H)	117 ^g	122(1H)	117 ^g	95(1H)	122(1H)	200(IM)	117 ^g	---	---	2,100	5,000 ^g	5,000 ^g	3.8
Zinc (Zn), Dissolved	90(1H)	117 ^g	120(1H)	117 ^g	90(1H)	120(1H)	189(IM)	---	90(1H)	120(1H)	---	---	---	3.8

TABLE 1: WATER QUALITY CRITERIA FOR ANALYTICAL RESULTS (Continued)
Final Storm Water Discharge Management Plan, IR-01/21, Parcel E, Hunters Point Shipyard, San Francisco, California

Analyte ^a	Benchmarks				Water Quality Criteria									
					California Toxics Rule		California Ocean Plan Consumption of Aquatic Organisms Only (2)		USEPA Ambient Criteria		EPA IRIS Reference Dose as a Drinking Water Level (5) California Drinking Water Standard (6) EPA Drinking Water Standard (7) Lab. MDL (8)			
	Enclosed Bay and Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Fresh Water)	RWQCB NPDES Storm Water Permit	Saltwater Consumption of Aquatic Organisms Only (1A)	Freshwater Consumption of Aquatic Organisms Only (1B)			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)				
Other														
Oil and Grease	15,000 ^j	15,000 ^k	15,000 ^k	---	---	---	75,000(IM)	15,000 ^k	---	---	---	---	92	
pH	6.0-9.0(IM)	6.0-9.0(IM)	6.0-9.0(IM)	---	---	---	6.0-9.0(IM)	6.0-9.0 ^l	6.5-8.5(IM)	6.5-9.0(IM)	---	---	6.5-8.5 ^g 0.01	
Specific Conductance (EC)	900	900	900	---	---	---	---	---	---	---	---	900	1	
Total Suspended Solids (TSS)	60,000(IM)	60,000(IM)	100,000 ^m	---	---	---	60,000(IM)	100,000 ^m	---	---	---	---	2,000	
Notes: The following sources were used to develop the most appropriate water quality goal for discharge of storm water from Outfall 33. The Multi-Sector General Permit values are source discharge limits; however, the values from the California Toxics Rule and the California Ocean Plan are receiving water limits. Therefore, if an analyte has a Multi-Sector General Permit value, it was compared separately with the appropriate California Toxics Rule value (saltwater or freshwater) and the California Ocean Plan value. The lesser of the two values of each comparison was used as the benchmark for the appropriate receiving water, except for copper at 63.6 µg/L and zinc at 117 µg/L, as required under a RWQCB NPDES Storm Water Permit. For analytes without values from the RWQCB NPDES Storm Water Permit, Multi-Sector General Permit, California Toxics Rule, or California Ocean Plan, the most appropriate benchmark value from the other sources listed below was selected.														
(1A, 1B)	EPA. 2000a. "Numeric Criteria for Priority Toxic Pollutants for the State of California; California Toxics Rule." Title 65 FR, Sections 31682-31719. May 18. (Values are "30-day Average Concentration for Human Health Protection [consumption of aquatic organisms only for both Saltwater and Freshwater]," unless indicated IM or 1H.) SWRCB. 2000. "The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California." May 18. (Phase 1 of the Inland Surface Waters Plan and the Enclosed Bays and Estuaries Plan was adopted by SWRCB on March 2, 2000, and became effective on May 18, 2000.)													
(2)	SWRCB. 2001. "Water Quality Control Plan for Ocean Waters of California (California Ocean Plan)." December 3. (Values are 30-day Average Concentration for Human Health Protection [consumption of aquatic organisms only], unless indicated IM.)													
(3)	EPA. 2000b. "National Pollutant Discharge Elimination System Storm Water Multi-Sector General Permit for Industrial Activities." Title 65 FR, Section 64746. Final Reissuance, October 30. (Values are from water quality criteria for freshwater aquatic life protection and human health protection [consumption of water and organisms], federal and state storm water discharge limits, and laboratory detection limits.)													
(4A, 4B)	EPA. Various Dates. "National Recommended Ambient Water Quality Criteria – Saltwater or Freshwater Aquatic Life Protection, Ambient Water Quality Criteria." (Values are LOEL concentrations for acute toxicity, unless indicated IM or 1H.)													
(5)	EPA. 1993. "Integrated Risk Information System Reference Dose as a Drinking Water Level."													
(6)	California Department of Health Services. 1991. "Drinking Water Standards, Maximum Contaminant Levels – California." Title 22 CCR, Division 4, Chapter 15. Domestic Water Quality and Monitoring.													
(7)	EPA. 2002. "Drinking Water Standards, Maximum Contaminant Levels – Federal." Title 40 CFR, Parts 141 and 143.													
(8)	Where sources 1 through 7 do not have a water quality goal for an analyte, the laboratory's MDL is used.													
a	All units are in µg/L													
b	Discharge limitations and compliance data													
c	EPA-recommended ambient water quality criteria – human health protection (consumption of water and organisms)													
d	Laboratory-derived minimum level													
e	Minimum level based on highest laboratory MDL times a factor of 3.18													
f	For metals, "Total" is the total fraction value and "Dissolved" is the dissolved fraction value. Only Source 1 (California Toxics Rule) provides conversion factors (or translators) for calculating metals values for both total and dissolved fractions. These calculations are only available for the following metals: arsenic, cadmium, chromium III, chromium VI, copper, lead, mercury, nickel, silver, selenium, and zinc. For the other sources listed, the dissolved fraction values for metals are also the total fraction values except as discussed for the California Ocean Plan. Freshwater-receiving assumptions for water for the dissolved fraction for cadmium, chromium III, copper, nickel, silver, and zinc are as follows: temperature 20 °C, pH 7.8, hardness as CaCO ₃ 100 milligrams per liter, and salinity of 20 grams per kilogram. Values for total metal fractions for the California Toxics Rule were calculated from dissolved metal fraction values from the California Toxics Rule using the reciprocal of the conversion factor (or translator) used to calculate dissolved metal fraction values from total metal fraction values. The California Ocean Plan value was developed for chromium VI, but may be applied to total chromium, if the valence (III or VI) of chromium is unknown. Dissolved fraction values from the California Ocean Plan for the following metals were calculated using total metals values that used the metal conversion factors from the California Toxics Rule: arsenic, cadmium, chromium VI, copper, lead, mercury, nickel, selenium, silver, and zinc. For all other metals for the California Ocean Plan, the total fraction value is also the dissolved fraction value													
g	Values in <i>italic type</i> (such as aluminum [Total] 50-200 µg/L) are secondary standards; all other EPA and California Drinking Water Standards listed are primary standards.													
h	EPA-recommended ambient water quality criteria –LOEL concentration for acute toxicity, freshwater aquatic life protection													
i	EPA-recommended ambient water quality criteria – acute (IM or 1H) concentration, freshwater aquatic life protection													
j	EPA-recommended ambient water quality criteria – chronic (24-hour or 4-day average) concentration, freshwater aquatic life protection													
k	EPA. 2002. Median concentration of storm water effluent limitation guidelines, Title 40 CFR, Part 419													
l	EPA. 2002. Secondary treatment regulations, Title 40 CFR, Part 133.													
m	National Urban Runoff Program median concentration.													
---	No criterion was established						EPA	U.S. Environmental Protection Agency						
µg/L	Micrograms per liter						FR	<i>Federal Register</i>						
(1H)	1-Hour average maximum concentration for saltwater or freshwater aquatic life protection						Lab.	Laboratory						
(IM)	Instantaneous maximum concentration for marine aquatic life protection						LOEL	Lowest observed effects level						
CCR	<i>California Code of Regulations</i>						MDL	Method detection limit						
CFR	<i>Code of Federal Regulations</i>						NPDES	National Pollutant Discharge Elimination System						
DDD	Dichlorodiphenyldichloroethane						PCB	Polychlorinated biphenyl						
DDE	Dichlorodiphenyldichloroethene						RWQCB	California Regional Water Quality Control Board						
DDT	Dichlorodiphenyltrichloroethane													

TABLE 2: ROUTINE ANALYTICAL PARAMETERS AND METHODOLOGIES

Final Storm Water Discharge Management Plan, IR-01/21, Parcel E
Hunters Point Shipyard, San Francisco, California

Routine Parameter	Analysis Method Number
pH	EPA 150.1
Specific conductance	EPA 120.1
Total suspended solids	EPA 160.2
Oil and grease	EPA 413.2 or EPA 1664 when adopted

Note:

EPA U.S. Environmental Protection Agency

TABLE 3: TOXIC POLLUTANT ANALYTICAL PARAMETERS AND METHODOLOGIES

Final Storm Water Discharge Management Plan, IR-01/21, Parcel E
Hunters Point Shipyard, San Francisco, California

Routine Parameter	Analysis Method Number
Semivolatile organic compounds	EPA 8270C
Polychlorinated biphenyls	EPA 8082
Metals	EPA 6010B (except mercury) or EPA 7470A for mercury

Note:

EPA U.S. Environmental Protection Agency

The above conditions remain in effect for a minimum of 1 year after filing certification with the RWQCB.

Unless otherwise instructed by the RWQCB, the Navy will collect and analyze samples from two additional storm events (or one additional storm event when certification is filed for the wet season beginning October 1) during the remaining term of this General Permit in accordance with Table 4.

TABLE 4: REDUCED SAMPLING SCHEDULE

Final Storm Water Discharge Management Plan, IR-01/21, Parcel E
Hunters Point Shipyard, San Francisco, California

Sampling Reduction Certification Filed By	Samples Will Be Collected and Analyzed in the Wet Seasons	
	Sample 1	Sample 2
September 1, 2003	October 1, 2003 – May 31, 2004	October 1, 2005 – May 31, 2006
September 1, 2004	October 1, 2004 – May 31, 2005	October 1, 2006 – May 31, 2007
September 1, 2005	October 1, 2005 – May 31, 2006	October 1, 2007 – May 31, 2008
September 1, 2006	October 1, 2006 – May 31, 2007	October 1, 2008 – May 31, 2009
September 1, 2007	October 1, 2007 – May 31, 2008	October 1, 2009 – May 31, 2010

The Navy will collect samples of the first storm event of the wet season. If samples cannot be collected from the first storm event of the wet season, then samples will be collected from another storm event during the same wet season. If samples cannot be collected in a required wet season, then samples will be collected from another storm event in the next wet season.

5.3 NON-STORM WATER DISCHARGE VISUAL OBSERVATIONS

The General Permit requires that non-storm water discharge visual observations be performed quarterly (January to March, April to June, July to September, and October to December) and within 6 to 18 weeks of the last observation. The observations are to be conducted during daylight hours and on days with no storm water discharges that are preceded by at least 3 days without storm water discharges. Non-storm water discharge visual observations are required for each drainage area at the site associated with industrial activities. Non-storm water discharge visual observations are also required at each authorized source of non-storm water discharge. As described in Section 4.3.4, the only authorized non-storm water discharge occurs on the landfill cap (landscape irrigation). Therefore non-storm water discharge visual observations should be made at the cap underdrain outfall and the two catch basins north of the cap (Figure 6). Appendix E provides detailed instructions for completing non-storm water discharge visual observations.

5.4 STORM WATER DISCHARGE VISUAL OBSERVATIONS

The General Permit requires storm water discharge visual observations of all storm water discharge locations during the first hour of one storm event per month during the wet season (October 1 through May 31). The storm water discharge visual observations will be conducted during daylight hours of a normal work day that are preceded by at least three days without storm water discharges. The observations will document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and source of any pollutant observed. If the presence of pollutants is observed, efforts will be made following the observations to identify the source of the pollutants. The investigation will begin at the outfall and continue through the drainage basin until the pollutant source is located, if possible. Once the source is located, actions to reduce or prevent pollutants from contacting storm water discharge will be taken. Appendix F provides detailed instructions for completing storm water discharge visual observations.

5.5 RECORDS MANAGEMENT AND REPORTING REQUIREMENTS

This section discusses the requirements for retaining and maintaining storm water records and documents and the reporting requirements of this SWDMP.

5.5.1 Records Management

The SWDMP and supporting records are public documents under Section 308(b) of the CWA. Any member of the public may request to review the site's storm water permit documentation. Additionally, the SWDMP and supporting records must be made available upon request of a representative of the EPA, SWRCB, RWQCB, or local storm water management agencies. Copies of the SWDMP will be retained on-site and made available to the public as requested.

Copies of the annual report will be retained for a minimum period of 5 years from the date of measurement, inspection, observation, report, or application. These records will be maintained and managed by the record keeper designated in Section 4.3.7. Other archived records may include copies of reports and other correspondence with the SWRCB, RWQCB, and the local storm water management agency. Records will contain the names of individuals; date, time, and place of the task; observation; inspection; and sample collection or measurement. Records about the SWPPP will include the following:

- Documents pertaining to changes in the design, construction, operation, or maintenance of a facility
- Documents pertaining to preventive maintenance tasks related to storm water pollution prevention

- Source area master list and schedule for BMPs
- Annual comprehensive site compliance evaluation report that includes (1) identification of personnel performing the evaluation, (2) the date of the evaluation, (3) necessary SWPPP revisions, (4) a schedule for revision and implementation that is compliant with the General Permit, (5) any incidents of noncompliance and the corrective actions taken, and (6) certification that the facility operator is in compliance with the General Permit. If the above certification cannot be provided, an explanation as to why the facility operator is not in compliance is required.

Records about the MRPP will include the following:

- Date, place, and time of the sampling, visual observations, and measurements
- Individual(s) who performed the sampling, visual observations, and measurements
- Date and approximate time of analyses
- Individual(s) who performed the analyses
- Analytical results, method detection limits, and the analytical techniques or methods used
- QA/QC records and results
- Non-storm water discharge inspections and visual observation and storm water discharge visual observation records
- Visual observation and sample collection exemption records
- Calibration and maintenance records of on-site instruments used
- Sampling and analysis exemption and reduction certifications and supporting documentation
- Records of any corrective actions and follow-up activities that resulted from the visual observations
- Annual report

5.5.2 Reporting Requirements

This section discusses the reporting requirements of the General Permit.

5.5.2.1 *Annual Report*

An annual report will be submitted by July 1 of each year to the Executive Officer of the RWQCB, San Francisco Bay Region.

The annual report will include the following:

- A summary of improvements or modifications of BMPs
- Descriptions of all known releases to storm drains or the Bay
- A summary of the visual observations and sampling results
- An evaluation of the visual observation and sampling and analysis results
- Laboratory reports
- Method detection limits and analytical parameters; analytical results that are less than the detection limit of each analytical parameter will be reported as “less than the method detection limit”
- The annual comprehensive site compliance evaluation report
- Explanation of why a facility did not implement any activities required by the General Permit (if applicable and not already included in the evaluation report)
- Certification of the Activity's compliance or noncompliance with the requirements of the General Permit
- Any information on sampling and analysis exemptions and reductions
- A description of why sampling or visual observations could not be conducted (if appropriate)

The annual report will be signed by a principal executive officer having responsibility for overall operations. The principal executive officer of a federal agency is the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency. A duly authorized representative may sign the certification if the authorization is made in writing by the principal/senior executive officer; the authorization will be kept as part of the SWPPP.

Tables 5 and 6 may be used as checklists for the monitoring program components that will be conducted and for information to be included in the annual report.

TABLE 5: STORM WATER PERMIT ANNUAL COMPLIANCE CHECKLIST

Final Storm Water Discharge Management Plan, IR-01/21, Parcel E
Hunters Point Shipyard, San Francisco, California

Year: _____
Signature: _____

Description	Completed (Date)	By (Signature)	Comments
Storm Water Pollution Prevention Plan			
1. SWPPP reviewed and modified for _____ (year).			
2. Annual comprehensive site compliance evaluation			
3. Records archived? (note where archived)			
Monitoring And Reporting Program Plan			
1. Non-storm water discharge visual observations (first quarter)			
2. Non-storm water discharge visual observations (second quarter)			
3. Non-storm water discharge visual observations (third quarter)			
4. Non-storm water discharge visual observations (fourth quarter)			
5. Sampling and analysis of storm water discharge (first storm of monitoring year)			
6. Sampling and analysis of storm water discharge (second storm of monitoring year)			
7. Storm water discharge visual observation (October)			
8. Storm water discharge visual observation (November)			
9. Storm water discharge visual observation (December)			
10. Storm water discharge visual observation (January)			
11. Storm water discharge visual observation (February)			
12. Storm water discharge visual observation (March)			
13. Storm water discharge visual observation (April)			
14. Storm water discharge visual observation (May)			
15. Annual Report submitted to RWQCB			

Notes:

RWQCB California Regional Water Quality Control Board
SWPPP Storm water pollution prevention plan

TABLE 6: RWQCB ANNUAL REPORT CHECKLIST

Final Storm Water Discharge Management Plan, IR-01/21, Parcel E
Hunters Point Shipyard, San Francisco, California

Instructions	Date	Completed	Initials
1. Report must be sent to: Executive Officer Regional Water Quality Control Board San Francisco Bay Region 2101 Webster Street, Suite 500 Oakland, CA 94612			
2. Report due July 1 at RWQCB.			
3. Report must include the following: a. A summary of visual observations and sampling results b. An evaluation of the visual observations and sampling and analysis results c. Laboratory reports d. Method detection limits and analytical parameters used e. An annual comprehensive site compliance evaluation report f. An explanation of why the Activity did not comply with the requirements of the General Permit (if applicable) g. Sampling and analysis exemptions and reductions information h. A description of why sampling or visual observations could not be conducted (if appropriate) i. Signature and certification in accordance with the General Permit			
4. Archive copy made			

Note:

RWQCB California Regional Water Quality Control Board

5.5.2.2 *Planned Changes*

The Navy will provide advance notice to the RWQCB and local storm water management agency of any planned physical alteration or additions to the general permitted site. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged.

5.5.2.3 *Anticipated Noncompliance*

The Navy will provide advance notice to the RWQCB and local storm water management agency of any planned changes at the permitted site that may result in noncompliance with the General Permit requirements.

5.5.2.4 *Noncompliance Reporting*

The Navy will report any noncompliance at the time monitoring reports are submitted. The written reports will contain (1) a description of the noncompliance and its cause; (2) the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue, and (3) steps taken or planned to reduce and prevent recurrence of the noncompliance.

5.5.2.5 *Compliance Schedule*

Reports of compliance or noncompliance with or any progress reports on interim and final requirements contained in any compliance schedule of this General Permit will be submitted no later than 14 days following each scheduled date.

5.6 *MONITORING REVISION*

The General Permit requires that the monitoring program be revised whenever appropriate. In general, a monitoring program can be evaluated quantitatively, based on assessment of water quality results (such as long-term trends in chemical concentrations or other measurements), or qualitatively, by keeping track of the extent to which observations and analytical monitoring are implemented. The monitoring program should be evaluated at least once each year for consistency with the evolving goals of the storm water monitoring program. The General Permit requires submittal of an annual report to RWQCB by July 1 of each year. This report will describe the monitoring tasks performed over the course of the year, as well as any results. The annual report will also present any information on sampling and analysis exemptions and reductions.

6.0 REFERENCES

- International Technology Corporation. 1999. "Project Completion Report for Site IR-1/21 Industrial Landfill."
- LawCrandall. 2001. "Storm Water Discharge Management Plan Update, Hunters Point Shipyard [HPS], San Francisco, California." May.
- PRC Environmental Management, Inc., and Montgomery Watson. 1994. "Storm Water Pollution Prevention Plan, Naval Facilities Engineering Command, Western Division, Hunters Point Annex, San Francisco, California, Revision 01." August 3.
- U.S. Environmental Protection Agency. 1993. "Presumptive Remedy for Comprehensive Environmental Response, Compensation and Liability Act Municipal Landfill Sites." September
- Tetra Tech EM Inc. (Tetra Tech). 2002a. "Basewide Health and Safety Plan, HPS, San Francisco, California." March 21.
- Tetra Tech. 2002b. "Draft Final Landfill Gas Technical Memorandum, Parcel E Industrial Landfill, HPS, San Francisco, California." July 2.
- Tetra Tech. 2003. "Final Operation and Maintenance Plan, IR-01/21, Industrial Landfill, Parcel E, HPS, San Francisco, California." June 12.

APPENDIX A
GENERAL PERMIT

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX A - GENERAL PERMIT IS CONTAINED
IN ELECTRONIC FORMAT AND IS TOO
VOLUMINOUS TO PRINT OR IMAGE

TO VIEW THE DATA, CONTACT:

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APPENDIX B
NOTICE OF INTENT

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX B- NOTICE OF INTENT IS CONTAINED
IN ELECTRONIC FORMAT AND IS TOO
VOLUMINOUS TO PRINT OR IMAGE

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APPENDIX C
NOTICE OF TERMINATION

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX C- NOTICE OF TERMINATION IS
CONTAINED IN ELECTRONIC FORMAT AND IS
TOO VOLUMINOUS TO PRINT OR IMAGE

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APPENDIX D
ILLCIT CONNECTION/NON-STORM WATER DISCHARGE IDENTIFICATION
AND TESTING PROTOCOL

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX D- ILLICIT CONNECTION/NON-STORM
WATER DISCHARGE IDENTIFICATION AND
TESTING PROTOCOL IS CONTAINED IN
ELECTRONIC FORMAT AND IS TOO
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APPENDIX E
NON-STORM WATER DISCHARGE VISUAL OBSERVATION INSTRUCTIONS

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX E - NON-STORM WATER DISCHARGE
VISUAL OBSERVATION INSTRUCTIONS IS
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APPENDIX F
STORM WATER DISCHARGE VISUAL OBSERVATION INSTRUCTIONS

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APPENDIX F – STORM WATER DISCHARGE
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APPENDIX G
STORM WATER SAMPLING INSTRUCTIONS

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX G – STORM WATER SAMPLING
INSTRUCTIONS IS CONTAINED IN ELECTRONIC
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APPENDIX H
MAINTENANCE ACTIVITIES FORM

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX H – MAINTENANCE ACTIVITIES FORM
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APPENDIX I
QUALITY ASSURANCE/QUALITY CONTROL GUIDANCE DOCUMENT PLAN

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX I – QUALITY ASSURANCE/QUALITY
CONTROL GUIDANCE DOCUMENT PLAN IS
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APPENDIX J
BEST MANAGEMENT PRACTICES

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX J – BEST MANAGEMENT PRACTICES
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APPENDIX K
ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION INSTRUCTIONS

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX K – VISUAL COMPREHENSIVE SITE
COMPLIANCE EVALUATION INSTRUCTIONS IS
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APPENDIX L
STATE WATER RESOURCES CONTROL BOARD ANNUAL REPORT FORM

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX L – STATE WATER RESOURCES
CONTROL BOARD ANNUAL REPORT FORM IS
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APPENDIX M
SPECIFICATIONS FOR FIBER ROLLS AND SILT FENCES

(Due to size, this appendix is provided on CD-ROM only.)

APPENDIX M – SPECIFICATIONS FOR FIBER
ROLLS AND SILT FENCES IS CONTAINED IN
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APPENDIX N
FINAL REPOSSES TO REGULATORY AGENCY COMMENTS ON THE
DRAFT STORM WATER DISCHARGE MANAGEMENT PLAN, IR-01/21,
INDUSTRIAL LANDFILL

FINAL RESPONSES TO REGULATORY AGENCY COMMENTS ON THE DRAFT STORM WATER DISCHARGE MANAGEMENT PLAN, IR-01/21, INDUSTRIAL LANDFILL, PARCEL E HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA

This document presents the U.S. Department of the Navy's (Navy) final responses to comments from the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region, and U.S. Environmental Protection Agency (EPA) on the "Draft Storm Water Discharge Management Plan, IR-01/21, Industrial Landfill, Parcel E, Hunters Point Shipyard, San Francisco, California," dated January 7, 2003. The comments addressed below were received from RWQCB and EPA on March 3 and May 28, 2003, respectively. This revision was based on a working meeting between the Navy and RWQCB on May 22, 2003. The meeting was held to address RWQCB's concerns about the Navy's responses to comments. At the meeting, the Navy and RWQCB reviewed responses to comments from both RWQCB and EPA.

RESPONSES TO RWQCB COMMENTS

General Comments

- 1. Comment:** During Board staff's February 12, 2003 inspection of the landfill, it was observed that although a vegetative cap covers much of the landfill, there are large areas, including roads, portions of the landfill cap, and drainage ditches that are within areas that are completely unprotected (see Photos 1 and 2). The existing Best Management Practice (BMP) implementation was not in compliance with the State Water Resources Control Board General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES Permit No. CAS000001 – Industrial General Permit), which requires identification and implementation of BMPs that will effectively prevent discharges of pollutants to waters of the State.

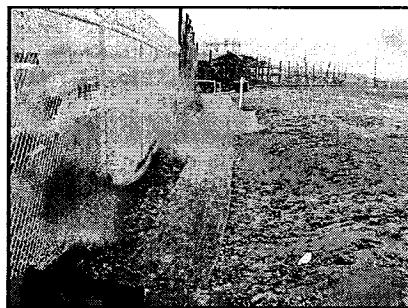


Photo 1. Jute mat within a portion of the drainage ditch along the north side of the facility surrounded by large area of unprotected dirt.

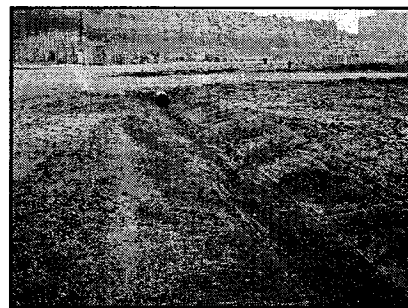


Photo 2. Jute mat with new vegetation growing in surrounded by dirt area and adjacent to dirt roads with no additional protection to prevent erosion. The extent of vegetation in the photograph is significantly less than 70 percent.

Appropriate BMPs should be implemented immediately in these areas to prevent further erosion, which could result in a discharge of sediment or other contaminants into drainage ditches, catch basins, and the San Francisco Bay. The post-construction BMPs described in the General Permit for Storm Water Discharges Associated with Construction Activity (SWRCB Order No. 99-08-DWQ – Construction General Permit) are considered by Board staff to be appropriate BMPs to utilize under the Industrial General Permit, because the subject facility is primarily unpaved and includes areas that have been recently disturbed by construction activities.

The Construction General Permit states that all disturbed areas must be stabilized and goes on to explain that “stabilization” means that a uniform vegetative cover with 70 percent coverage has been established, or equivalent stabilization measures have been employed. Therefore, until permanent vegetation is established, appropriate soil cover measures must be implemented to protect soil particles from detachment and transport by rainfall. Measures such as: covering with blankets, reinforced channel liners, soil cement, stabilizers, or binders, fiber matrices, geotextiles, mulch, temporary/permanent seeding/vegetation, or fiber rolls, and a variety of other alternatives are recommended as alternative stabilization measures. Dirt roads on the landfill are subject to erosion and should be stabilized using appropriate BMPs, for example, allowing vehicles in only limited areas and using barriers or fencing and maintaining a gravel cover on roadways.

It appeared that most of the areas of greatest concern to Board staff had been disturbed during grading associated with installation of the Landfill Gas Time Critical Removal Action in October 2002. Where “BMPs” were installed, it appeared that only rudimentary sediment controls had been emplaced. More specifics regarding these areas can be found in our comments below, although the Navy should review the overall landfill area in light of these general comments and upgrade the BMPs across the landfill. It is strongly advised that the Navy refer to the Construction General Permit along with the most recent edition of the RWQCB’s “Erosion and Sediment Control Field Manual” (Fourth Edition, August 2002) to identify the most appropriate application for the BMPs identified in the Construction General Permit. Also suggested, is our video entitled “Hold On To Your Dirt”, which provides an overview of various BMPs. Both are available from the Oakland Regional Board office. In addition, Board staff, in conjunction with the San Francisco Estuary Institute, offers a training seminar several times during the late Summer and early Fall. This seminar reviews the requirements of the construction General Permit and the appropriate BMPs for unpaved areas and

construction sites. It is recommended that the Navy and its contractor attend this seminar when it is next offered.

In the future, the Navy is strongly advised to follow the requirements in the Construction General Permit in all of its construction activities at this site, including those that are currently being done on CERCLA segments and for projects that are considered “time critical” or “emergency” in nature.

Response: The Navy completed construction of the landfill gas control system in October 2002. The storm water discharge management plan (SWDMP) was issued after construction and was intended for Installation Restoration Site 01/21 (IR-01/21), the Industrial Landfill site, where maintenance activities were associated only with the landfill cap. The SWDMP, therefore, follows the substantive requirements of the State Water Resources Control Board’s General Permit for Storm Water Discharges Associated with Industrial Activities, rather than construction activities. Section 4.3.8 of the draft SWDMP identifies the best management practices (BMP) implemented at the site. BMPs included fiber rolls, vegetation, jute matting, and silt fences. These erosion and sediment controls are in compliance with the Industrial General Permit because they prevent discharges of pollutants from the site and into existing wetlands and San Francisco Bay (Bay). These BMPs are consistent with the maintenance BMPs discussed in California Department of Transportation (Caltrans) storm water guidelines (Caltrans 2002). These BMPs are also listed as erosion and sediment controls in the General Permit for Storm Water Discharges Associated with Construction Activity. The Construction General Permit, however, does not apply to this site for the reasons explained below.

After the SWDMP was released, additional maintenance work was required at the University of California, San Francisco (UCSF) compound. Specifically, work was necessary to (1) alleviate problems at the UCSF’s research facility drainage ditch and (2) complete the irrigation system for the landfill cap in the area of the “v” ditch.

This work was completed the day before RWQCB visited the site and was the cause of sparse vegetation. The draft SWDMP (Section 4.3.8) discusses installation of an underground storm water drain line and catch basins at the UCSF compound and the associated BMPs, which included silt fences and vegetation. Following seeding of the drainage channel above the drain line, jute mats were installed to protect young roots from being washed out during storm events and to allow vegetation to grow. Jute matting was also installed in the ditch northwest of the cap, near the location of the main pipe feeding the cap irrigation system. Reinforced channel liners, soil cement, stabilizers, fiber matrices, and geotextiles are not appropriate BMPs following seeding because these covers may inhibit

the growth of vegetation by blocking sunlight and the infiltration of water. These measures are appropriate at areas that have not been vegetated.

Sheet flow in the area northwest of the cap is directed from the ditch to a heavily vegetated channel that leads into a seasonal freshwater wetland area. Any sediment in the runoff would be filtered out before reaching the wetland area. In addition, monitoring will be conducted at a location just upstream from the wetland area. Flow in the UCSF ditch enters the basewide storm water drain system, which has an outfall at the southern end of Parcel E. The Navy has included a figure in the final SWDMP to show this outfall (Outfall 33). Erosion and sediment controls in the ditch include vegetation with jute matting in the ditch, silt fences, and gravel bags, and silt fences around the catch basins. The silt fences and gravel bags provide some filtering of the runoff, but primarily slow the flow so that sediments can naturally drop out before reaching the catch basins.

During the same time, the area southeast of the cap, noted as the “gully area” in the SWDMP, also required maintenance to repair erosion channels caused by heavy rain events. Geotextile, fiber rolls, gravel, gravel bags, and fiber rolls were laid down to prevent further erosion.

Specific Comments

1. Comment: Section 4.2.2, Drainage and Topography, Page 24:

The text states that “The landfill cap...gently slopes inward toward a central rip rap-lined drainage swale”. This section needs to be clarified to indicate that the entire landfill does not slope towards the central rip rap-lined drainage swale. Portions of the eastern, western, and northern sides of the landfill are noted to drain towards the east, west, and north. The text needs to describe where these areas drain to and where the stormwater from these areas is ultimately discharged. This evaluation should contain a water balance analysis which includes a description and quantification of water entering, leaving, and remaining on-site from all sources. Figure 4 needs to be modified to illustrate the flow paths of all water falling onto the landfill, including all drainage ditches, culverts, swales, and catch basins. This analysis will enable Board staff to evaluate the mitigation design features, BMPs, and the stormwater monitoring plan.

Response: The Navy has revised Section 4.2.2 of the final SWDMP to clearly describe the topography of the landfill cap. Figure 5 shows the site features of IR-01/21, such as culverts and drainage ditches. The Navy has revised Figure 4 of the final SWDMP to show these site features as well as the topography and runoff flow path. Section 4.2.2 of the draft SWDMP describes surface flow at the site; however, the Navy has revised this section to provide more details of water sources. The General Permit does

not require a quantitative analysis of water balance. The only water expected to leave the site will be from storm water events that exceed the evapotranspiration capacities of soil and vegetation. Storm water flow depends on the intensity and duration of the storm. Storm water structures, including ditches, culverts, and BMPs added at the site, are designed to manage a 100-year, 24-hour storm.

2. **Comment:** Section 4.2.2, Drainage and Topography, Page 24:

The text states that “the surface of the cap is completely vegetated”. Observations made during the site visit indicate that while a good effort has been made to vegetate the cap, it is not “completely vegetated” as represented, particularly in the areas to the north, northwest, and southeast. As stated in our general comments above, the Construction General Permit states certain criteria must be met for “final stabilization” after a construction project is completed. These criteria would apply to any area of the landfill.

Response: The landfill cap, as shown on Figures 1 through 5 of the draft SWDMP, does not encompass areas at the north, northwest, and southeast of the site. Vegetation is the final stabilization measure, and it will take some time for vegetation to be established. During this period, the Navy has implemented temporary control measures, such as silt fences, fiber rolls, and jute matting. Additional or different BMPs may be required when the final remedy for the site is implemented.

3. **Comment:** Section 4.2.3, Historical and Current Land Uses, page 25:

The text states that a portion of the landfill was capped “as the result of a brush fire on the existing cap earlier in the year”. It is Board staff’s impression that the new cap was placed on a portion of the landfill to put a fire within the landfill out. The text should be clarified to reflect this fact.

Response: A brush fire occurred in August 2000 at the landfill site. The landfill was capped to smother residual smoldering of near-surface debris and to prevent the future entry of air into the landfill. A fire was never confirmed to be within the landfill itself, and gas samples collected from within the landfill did not indicate that any combustion of debris had occurred. The Navy has revised Section 4.2.3 of the final SWDMP to include this background information.

4. **Comment:** Section 4.3.4.1, Authorized Non-Storm Water Discharges:

Landscape Irrigation, Page 29: The text states that landscape irrigation of the Industrial Landfill cap is performed as part of the maintenance of the vegetative cover. BMPs which were implemented

include limiting excessive watering and adjusting irrigation controls to seasonal needs. The document should provide a more detailed description of how the watering program will be overseen to ensure that water does not reach the landfill cap.

Response: The landscape irrigation system was installed to deliver water to the landfill cap. The purpose of the BMPs for the irrigation system is to limit the amount of non-storm water runoff generated at the site. The watering operation is discussed in the final operation and maintenance (O&M) plan (Tetra Tech EM Inc. [Tetra Tech] 2003), and watering will be adjusted as required to prevent runoff.

5. Comment: Section 4.3.8, Erosion and Sediment Controls, Page 32:

The text states that after each quarterly site inspection, necessary erosion control measures will be recommended and implemented. It is strongly recommended that during the winter months, particularly when new BMPs are being established, that the site be inspected at a minimum of monthly, or after each major rainfall event.

Response: The quarterly site inspections noted in Section 4.3.8 of the draft SWDMP are conducted under the O&M plan for the landfill cap (Tetra Tech 2003). Section 5.4 of the draft SWDMP discusses storm water discharge visual observations that will be conducted during a storm event once per month during the wet season.

6. Comment: Section 4.3.8, Erosion and Sediment Controls, Page 32:

The following specific BMP was cited in the text that applies to erosion and sediment control: "Revegetate barren areas to prevent soil erosion, cover large areas (defined as larger than 20 square feet in the O&M Plan) of exposed soil to keep it washing away, plant vegetation, apply mulch, or use erosion-control fabric". The text also states that the area north and northwest of the cap and the drainage ditch located northwest of the cap, all of which were disturbed during recent construction activities associated with the landfill gas control system, have all been seeded.

Although these areas have been seeded, as stated above in Board staff's General Comments, until permanent vegetation is established, an interim protective measure needs to be implemented to protect soil particles from detachment and transport by rainfall.

Response: Please see the first paragraph of the response to RWQCB general comment 1. Areas will be evaluated on a case-by-case basis. Sloped areas where erosion may occur will be protected to prevent exceedances of discharge limits.

7. Comment: Section 4.3.8, Erosion and Sediment Controls, Page 34:

The text states that fiber rolls were installed at the outlet of the drainage ditch located northwest of the cap. During the inspection, fiber rolls were not observed at this location, although a few hay bales were present. It was not clear what purpose the hay bales serve at that location. An appropriate BMP should be installed at this location.

Response: Fiber rolls were ineffective in this area because of (1) the size of the rolls available (9 inches in diameter) before the next storm event and (2) the amount of surface flow expected in this ditch. Instead, hay bales were placed at the end of the ditch to slow surface flow and allow sediments to settle out. However, during the storm event before the site tour with RWQCB, the hay bales were found to be holding back too much runoff and were removed from the ditch. The Navy would like to reiterate that runoff in this ditch, and in the general western area of the site, flows into a heavily vegetated drainage channel along the western Parcel E fence. As a result, sediments are effectively filtered out and will not reach either the existing wetland area or the Bay. The Navy will conduct monitoring just upstream of the wetland to ensure that sediments are filtered out. In addition, significant vegetation has been established since the time of the previous inspection. The vegetation will prevent excessive erosion from entering the ditch.

8. Comment: Section 4.3.8, Erosion and Sediment Controls, Page 34:

The text states that an underground drainage pipe and catch basin would be installed with a 4-by-4-foot square silt fence around the catch basin grate as a temporary sediment control measure while vegetation in the area is being established. Photo 3 shows that this catch basin and silt fence are surrounded by unprotected soil. As stated above, some type of soil cover must be implemented while waiting for the vegetation to be established. Secondly, Board staff believes that a silt fence is not an adequate sediment control measure for the area around the catch basin as sediment-laden stormwater migration could occur through the silt fence. A BMP that will effectively filter sediment, such as sand or gravel bags or fiber rolls should be placed around the catch basins. In addition, Section 4.2.2 and Figure 4 should be revised to include a description of the route and ultimate destination of the storm drain flow in this area.

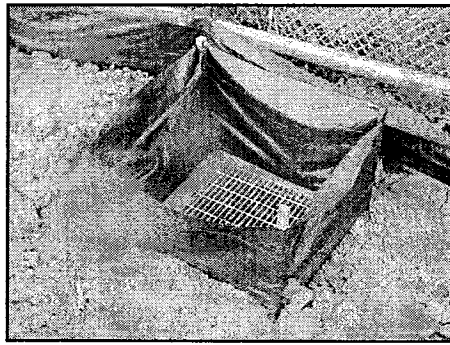


Photo 3. Catch basin and silt fence surrounded by unprotected soil, allowing sediment laden storm water to pass through the silt fence into the catch basin and storm drain.

Response: The Navy has installed vegetation, silt fences, and gravel bags in these areas. RWQCB noted that these controls had been installed during a subsequent site tour conducted on March 6, 2003.

9. Comment: Section 4.3.8, Erosion and Sediment Controls, Page 34:

The text states that a sedimentation basin is planned to collect storm water flow from south and southeast of the cap upstream of a location where it channelizes just before entering the Bay. This area is alternatively called the “black sand beach” or “gully” area. Prior to installing the sedimentation basin, the Navy states that two rows of 120-foot length fiber rolls would be installed as a temporary control measure. As shown on Photo 4, Board staff observed that the fiber rolls were for the most part improperly installed on top of the ground surface rather than within a trench, thereby allowing sediment to bypass the barrier. The present installation technique will not prevent sediment-laden stormwater from entering the Bay at this location which Board staff understands the sediments may contain elevated concentrations of pollutants.



Photo 4. Fiber rolls that appear to be improperly installed in “black sand beach” or “gully” area, possibly allowing contaminated sediments to enter San Francisco Bay.

During the inspection, Board staff were informed that after the original proposed temporary control measures were installed, they were washed away during a heavy rainfall and pollutants from this location may have been released in to the Bay. Board staff is concerned that the regulatory agencies were not informed about this release of potentially toxic compounds into San Francisco Bay. The

revised document should include a plan for submitting to the Board a report within five days of any discharge of contaminated sediment to San Francisco Bay. The report should include an estimate of the volume of sediment discharged to the Bay, the concentration of this sediment, an evaluation of the environmental effect of this discharge, and a plan for site improvements so that future discharges are prevented. The Annual Stormwater Report should provide a summary of all discharges and control measure upgrades that have occurred within the past year.

The revised report should state that the Navy is committing to maintain this area into the future. The engineering analysis of alternative sediment control measures for this area should be provided, as well as rationale for selecting a sedimentation basin. This analysis should include a discussion of the extent of contamination in this area and the effect of the sedimentation basin on impacted sediments and soils in the area. As with the other unvegetated areas across the landfill, interim soil stabilization measures should be put into place immediately.

Response: During a heavy rain event, noticeable erosion channels were discovered in the gully area. In response, the Navy installed Geotextile secured with gravel rocks at a low point in the gully to divert flow and prevent further erosion in the area. This low point was, in effect, a lined channel that provided an outlet for the runoff. In addition, the Navy installed fiber rolls across the entire outflow path to control the flow of runoff. The partially buried fiber rolls act as a barrier to slow the runoff and allow sediments to settle out. The fiber rolls visible in the photograph 4 above were, in fact, buried about 3 inches (one-third the diameter of the rolls) and placed on top of dirt berms about 2 to 3 feet above the low point. Runoff in this area will not be sufficient to flow over the berms.

The Navy implemented additional controls after the site tour to address RWQCB's concerns. Gravel bags (one to two bags high) were placed bayside of the fiber rolls. In addition, the Navy will improve this BMP by installing a sedimentation basin, as described in Section 4.3.8 of the final SWDMP. The Navy will provide RWQCB further details and a conceptual figure as the design of the sedimentation basin is completed. Along with the design details, the Navy will also discuss analysis of alternative sediment control measures, rationale for selecting a sedimentation basin, and impacts on sediments in the area. Contamination in the area of the gully will be addressed in the Parcel E Shoreline Technical Memorandum, which is due to be released in July 2003 (Tetra Tech No Date). In addition, the Parcel F validation study (Battelle 2000) presents the evaluation of the offshore contaminants. Please refer to these documents for further details.

The annual report for the SWDMP will discuss changes at the site that have affected storm water discharge.

10. Comment: Section 5.2.1, Industrial Outfalls and Sampling Locations, Page 40/41:

The text states that there are three main drainage areas and two of these locations were selected as representative storm water sampling locations. The selection of other sampling locations should be based upon the water balance analysis requested above. In addition, stormwater samples should be collected, including at the recently installed catch basins. An evaluation of the feasibility of collection of a stormwater sample from the main drainage swale should be made, as this drainage swale collects a significant amount of the rainfall falling on the landfill and discharges to the ground surface in close proximity to San Francisco Bay.

Response: The Navy has revised Section 5.2.1 of the final SWDMP to include catch basins as sampling locations. It is not feasible for the Navy to collect samples from the underdrain outfall of the cap's drainage swale because of the low volume of discharge. The underdrain system captures surface flow and infiltration on the cap that results in a slow discharge. The Navy has revised Section 5.2.1 to include this information.

11. Comment: Section 5.2.3.2, Sampling and Analysis Reduction:

The report states that the Navy may reduce the number of storm water samples if certain conditions have been met. In addition to the specified conditions, samples should also be collected during a storm event from each identified landfill drainage area. At that time, Board staff will review the evaluation and work with the Navy to determine whether the sampling program can be reduced.

Response: The Navy has revised Section 5.2.3.2 of the final SWDMP as requested.

12. Comment: Section 5.5.2.1, Annual Report:

In addition to the information that is proposed to be included in the Annual Report, Board staff requests that the Annual Report include a description of observations made during field inspections, a description of improvements or modifications made to BMPs, and a description of all known releases of sediment to storm drains or the Bay.

Response: The Navy will include the requested information in the annual report.

RESPONSES TO EPA COMMENTS

GENERAL COMMENTS

1. **Comment:** It appears that this document is a lightly-edited generic storm water management plan (SWMP). The plan references sinks, storage areas, tanks, fueling areas, dust-generating areas, vehicle and equipment storage areas, oil water separators, roofs, sewers, et cetera, non of which appear to be present at the site. The SWMP indicates that lists of raw materials and locations where the material is being stored, received, shipped and handled are to be prepared, Almost half of the document, 240 pages, consists of an unreferenced copy of a department of defense best management practices (BMPs) guidance document. However, the only BMP implemented at the landfill, fiber rolls to control silt in run-off, is not described in the guidance. It is not clear why the SWMP is general rather than site specific; the SWMP could be edited to make it more useful for the personnel charged with implementing it. Please provide a general edit of the SWMP to remove extraneous material.

Response: The draft SWDMP includes various BMPs currently not implemented at the landfill. These generic BMPs are included for reference in the event that activities change at the landfill or that new or modified activities at the landfill require additional BMPs. Fiber rolls are not the only BMP implemented at the landfill. The general BMPs discussed in Section 4.3.6 of the draft SWDMP are identified below.

Nonstructural BMPs include the following:

- Good housekeeping
- Preventive maintenance
- Employee training on storm water pollution prevention
- Record-keeping and reporting
- Erosion control and site stabilization
- Inspection
- Quality assurance and quality control programs

Structural BMPs include the following:

- Erosion and sediment control devices
- Storm water runoff control devices
- Storm water treatment

The following site-specific BMPs are discussed in Section 4.3.8 of the draft SWDMP:

- Revegetate barren areas to prevent soil erosion, cover large areas (defined as greater than 20 square feet in the O&M plan [Tetra Tech 2003]) of exposed soil to keep it from washing away, plant vegetation, apply mulch, or use erosion-control fabric
- Prohibit planting of fruit or vegetable plants at hazardous waste sites (signs must be posted in applicable areas)

To implement these BMPs, revegetation is underway and mostly completed, fiber rolls are in place, and sedimentation basins are being designed. The Navy prefers to maintain the generic portions of this plan for reference in the event that activities at the landfill should change. These generic references may be eliminated during annual revisions to the SWDMP; however, they do not impair the execution of the plan. In addition, this plan is consistent with other Navy SWDMPs and is intended to serve as a comprehensive document for all facets of the storm water program.

2. **Comment:** The drainage area serving the new catch basin seems to be very large for a 12 inch diameter pipe that is probably sloped at less than 0.5% and is probably very old. On the other hand, a significant water backup at the catch basin might not be a problem. Please revise the SWMP to discuss if the capacity of the existing 12-inch diameter storm water drain pipe has been assessed. If the capacity of the pipe is not adequate (or if it is unknown what its capacity is) to manage the five-year storm event (or a 100 year storm event if this SWMP is intended to be the permanent plan), please revise the SWMP to discuss the size of the water body that is likely to form at the catch basin and whether this water body would be likely to overtop the catch basin or create other problems.

Response: Specific design parameters for storm water controls and BMPs will be completed on an individual basis, and any reference to specific dimensions for drainpipes in the final SWDMP should be considered conceptual, unless the structures are in place. The Navy will assess design features during the design of each BMP. These assessments are not included in the final SWDMP. However, calculations show that the 12-inch pipe is more than sufficient to manage storm water from a 100-year, 24-hour storm, with only minimal backup at the basin because of frictional losses at the entrance.

3. **Comment:** The plan only indicates that annual reports will be submitted to the Regional Water Quality Control Board. Please include U.S. EPA on the distribution list for all reports.

Response: Submittal of the annual report to RWQCB is required under storm water regulations. As a courtesy, the Navy will submit the annual report to the Base Realignment and Closure Cleanup Team (BCT). However, RWQCB is the lead agency for storm water, and comments from the BCT will be considered for information only.

SPECIFIC COMMENTS

4. **Comment:** **Section 3.3, Identification of Non-Storm Water Discharges, Page 16:** The Plan references Appendix E for the procedures to be used to monitor storm water outfalls at the Industrial Landfill. The material contained in Appendix E, while detailed, is completely generic. Please revise Section 3.3 to at least include and reference a figure showing where the storm water outfalls are to be monitored are located, a schedule containing the dates (or events if the monitoring is to take place during a given event, such as the first significant rainfall of the season) when the monitoring is to take place, a list of personnel responsible for performing the monitoring, a description of the reporting requirements for each monitoring event and a list of agencies and individuals who are to receive the reports. If there are specific hazards associated with any particular monitoring location, they should also be called out in Section 3.3.

Response: The Navy has revised Section 5.3 of the final SWDMP to include the locations of non-storm water discharge observations. Section 5.3 of the final SWDMP includes the schedule for these observations. Hazards associated with any storm water activities will be identified in the site-specific health and safety plans to be prepared by Navy contractors.

5. **Comment:** **Section 3.4.2, Maintenance Activities, Page 18:** The Plan contains a list of objects requiring maintenance. Most of these objects (e.g., roofs and sidings, oil/water separators, etc.) are unlikely to be present at the landfill. Please remove any of the listed objects which are not present at the industrial landfill and provide a list of objects that are present and which may require maintenance. Please group the objects which may require maintenance in a table that provides the required inspection frequency, a listing of the personnel responsible for the inspections and a list of the personnel responsible for the maintenance. Please provide the procedure to be used to assure that if the inspections indicate that maintenance is necessary, the proper personnel will be notified and that a re-inspection will take place within a specified amount of time to assure the maintenance was performed.

Response: Please see the response to EPA general comment 1. The list of objects to be inspected will be left in the plan. The draft SWDMP recommends that inspections be conducted quarterly, but that the frequency of the inspections can be increase or reduced as needed. The Navy and its contractors will provide personnel lists once execution of the program has begun. In addition to routine activities conducted during the year, the annual report will discuss any maintenance that has not been completed at the time the annual report is submitted.

6. **Comment:** **Section 4.4, Annual Comprehensive Site Compliance Evaluation, Page 37:** The SWMP indicates that annual inspections will take place at no greater than 8-month intervals. This seems like it may lead to inspections more frequently than the term “annual” implies, because the 8 month interval would result the inspection occurring 4 months earlier every year. The purpose of the proviso that annual inspections take place no more than 16 months apart is probably meant to prevent an inspection on January 2nd of one year and December 31st of the next. Please revise the SWMP to require inspections every calendar year with no annual inspection more than 16 months after the previous inspection.

Response: The reference to “8 months” in Section 4.4 of the draft SWDMP is verbatim from the General Permit:

“The facility operator shall conduct one comprehensive site compliance evaluation (evaluation) in each reporting period (July 1-June 30). Evaluations shall be conducted within 8-16 months of each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 90 days of the evaluation.”

The above quote discusses the terms of the annual evaluation of site compliance, and the SWDMP complies with the General Permit.

7. **Comment:** **Section 5.2.2.2, Toxic Pollutant Parameters, page 41 and Table 2, Page 42:** The text states that stormwater samples will be analyzed for four toxic parameters, but only three parameters are listed in Table 2. Please resolve this discrepancy.

Response: The Navy has revised Section 5.2.2.2 of the final SWDMP to indicate that only three parameters were analyzed for.

8. **Comment:** **Table 3, Reduced Sampling Schedule, Page 44:** The General Permit requires that two stormwater sampling events take place each rainy season. Table 3 indicates that only one storm water sampling event will take place in the 2003, 2004, 2008 and 2009 seasons. Please

provide the justification for only collecting storm water samples during one event in these years.

Response: Table 4 specifies a range of dates when the two storm sampling events should be conducted in 2003, 2004, 2005, 2006, and 2007. This table also indicates the due date (first column) by which the Navy must file a certification to reduce sampling events during the subsequent wet season. This table does not indicate that only one round of sampling will be conducted for the listed years.

9. **Comment:** **Figure 5, Site Features and BMPs:** Please revise this figure as follows:

1. Provide a symbol indicating discharge points of storm water into San Francisco Bay and label these discharge points;
2. Indicate sampling and visual monitoring locations;
3. Show the locations of the subsurface drainage layer and 4-inch diameter corrugated and perforated drainpipe and where this drainpipe discharges; and
4. The location of the proposed sediment basin south of the landfill.

Response: The Navy has revised Figure 5 of the final SWDMP to show the locations of discharge, sampling, and visual observation, and the proposed location of the sedimentation basin. Appendix E of the final O&M plan includes locations and details of the cap drainage layer and underdrain pipe (Tetra Tech 2003).

9. **Comment:** **Appendices:** The review copy of the SWMP did not contain hard copies of the appendices. Appendices E-I and K-M only take up 54-double sided pages, which seems like a manageable number. Please assure that the final copy of the CWMP issued to field personnel contain hard copies of these appendices.

Response: This comment number (9) is repeated; however, it is an additional comment (10). Field copies of the final SWDMP will include hard copies of all appendices.

ERRATA COMMENTS

1. **Comment:** Section 5.5.2.1, Annual Report, Page 47: San Diego should be San Francisco Bay.

Response: The Navy has revised Section 5.5.2.1 of the final SWDMP as requested.

2. **Comment:** Appendix D, Page D-3: This page references the San Diego County Flood Control Division and lists a phone number for the National Weather Service in the 619 area code. Please provide local references.

Response: The Navy has revised Appendix D of the final SWDMP as requested.

REFERENCES

California Department of Transportation (Caltrans). 2002. "Statewide Storm Water Quality Practice Guidelines." April.

Tetra Tech EM Inc. 2003. "Final Storm Water Discharge Management Plan, IR-01/21, Industrial Landfill, Parcel E, HPS, San Francisco, California." June 12.

Battelle. 2000. "Draft Final Parcel F Validation Study Work Plan, HPS, San Francisco, California, September.